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ABSTRACT

Previous studies of measurement of employment and unemployment have been conducted, but a similar statistical program on job vacancies could provide a more complete and accurate insight into the condition of the labor market for employers, placement agencies, counselors, and vocational education planners. This study tested the feasibility of measuring job vacancies through three quarterly surveys of some 400 employers in the Rochester area in 1965. A 99 percent response by employers demonstrated their willingness to participate in a voluntary statistical reporting program. The definition of a job vacancy as an unfilled job that an employer is actively seeking to fill by hiring a person outside his organization was found to be operational. Major findings included: (1) The total estimate of eight to nine thousand job vacancies represented about 3 percent of all jobs in the country, (2) The sample size of 400 was adequate to provide reliable estimates of vacancies, (3) The estimated cost of continuing quarterly collection of job vacancy data in 146 major metropolitan areas of the U.S. was $8 million to $8.5 million per year. (CD)

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Measuring Job Vacancies

A Feasibility Study in the Rochester, N. Y. Area

By John G. Myers and Daniel Creamer

This study was made possible by a grant from the Ford Foundation

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Foreword

THE CONFERENCE BOARD, from its very inception a half-century ago, has considered the development of new economic statistics of broad public interest to be one of its major research functions. Looking beyond the immediate interest of its members, the Board pioneered in the development of such valuable series as employment, payrolls, length of work-week, wage rates in manufacturing industries, cost-of-living indexes, and national income and wealth estimates. To this roster, we now add with this report a contribution concerned with the measurement of job vacancies.

This exploratory effort was undertaken to determine the feasibility of measuring the demand for labor to complement the wealth of material on the supply of manpower. The absence of a national statistical program on job vacancies as a counterpart to existing measures of unemployment constitutes a serious informational gap. The need for these data has become acute as manpower programs, an essential weapon in the war against poverty, have come to engage an ever-larger fraction of public attention and resources. Filling this gap in the existing system of economic intelligence is clearly a public service and thus an appropriate project for foundation support. Luckily, the Ford Foundation and Dr. Marshall A. Robinson, Director of its Program in Economic Development, shared these views, and generously funded the research project with a grant of $112,000. THE CONFERENCE BOARD gratefully acknowledges this timely and generous assistance.

This exploration in the feasibility of measurement took the form of three quarterly surveys of a representative sample of some 400 employers in the area of Rochester (N. Y.) in 1965. Their complete cooperation is ample testimony to industry's keenly developed sense of public responsibility. We also like to believe that this reflects, in part, their high evaluation of THE CONFERENCE BOARD. In any case, it is a pleasure to express publicly our appreciation for their full and gracious cooperation.

Another source of gratification is the deep interest and constructive attitude shown by members of the Advisory Committee throughout this study. They too, graciously and helpfully, met all demands placed on them. For this our many thanks to all of those listed on the following pages. Neither the Advisory Committee nor the Ford Foundation has any responsibility, of course, for the contents of the report.

This report is positive in its major finding: It is feasible (and meaningful) to measure job vacancies on a *voluntary* basis. The qualification regarding voluntary submission of the data is important. By providing the information on this basis employers demonstrate that the appropriate data can be obtained without resort to compulsory registration of job openings with the offices of the U. S. Employment Service. This, some fear, may lead to serious encroachment on employers' freedom to choose their employees. However, as in all of the Board's research, the report presents a full and objective statement of procedures and findings so that the reader may reach his own conclusions.

This report was prepared jointly by Dr. John G. Myers and Dr. Daniel Creamer of the Special Projects Department, in the Office of the Chief Economist under the direction of Martin R. Gainsbrugh, the Board's Chief Economist and Senior Vice President.

H. Bruce Palmer
President

Authors' Acknowledgments

We ranged widely for assistance at all stages of the inquiry—in designing the survey, in canvassing respondents, and in analyzing the results. Without exception, all on whom we called gave us help unstintingly and graciously. This cooperation was a continuous source of pleasure.

At the design stage, and indeed throughout, we enjoyed the full cooperation of those offices in the U. S. Department of Labor that are engaged in similar surveys. We benefited very much from the exchange of survey designs, plans, and ideas. In particular, we would like to thank Harold Goldstein, Assistant Commissioner, Manpower and Employment Statistics, and his associates, Irwin F. O. Wingeard and Robert L. Stein. A similar debt is owed to the Bureau of Employment Security, to its then director, Louis Levine, and to his associates Vladimir D. Chavrid, Harold Kuptzin, and Norman Medvin, and to Robert Seebol in the New York Regional Office.

The keen and sympathetic interest of the New York State Division of Employment in the persons of Alfred L. Green, Executive Director, and Karel F. Ficek, Research Director, as well as other staff members, smoothed our way on several fronts. We are especially grateful for their making available a listing of employers in the Rochester area covered by the State's unemployment compensation system. This comprehensive list served as the large central core of the sampling frame. It was this office also that arranged for the cooperation of Employment Service offices in Rochester. The latter under the leadership first of Mr. Leo Bernstein, Assistant District Superintendent, and later his successor, Mr. Edward S. Croft, were kind enough to prepare special tabulations of operating statistics to coincide with our survey dates. We are also indebted to Mr. Jacob Karger, Senior Economist in the Rochester office of the Division of Employment, who gave freely of his intimate knowledge of the Rochester market. Our special thanks also to Miss Estelle Shrifte, Principal Economist, Research and Statistics Department, New York State Division of Employment (New York City office), for her patient and helpful reponse to our numerous requests for background information.

It is a special pleasure to acknowledge our large debt to Russell C. McCarthy, Executive Director of the Rochester Industrial Management Council, for his wise advice, which was frequently sought and always freely and graciously given, for his staunch support of the project objectives, and for permitting us the use of the Council's offices and facilities.

In carrying out the employer interviews we were fortunate in engaging the services of Bernardine Slade Market Research, Inc. (now Slade Research Associates, Inc.), to call upon the smaller employers. Their interest in the project extended beyond the bounds of a commercial arrangement. For interviews with larger employers we had the effective assistance of Edward Greenblat, Gregory Kipnis, Patrick Shima, and Richard Towber, all members of THE CONFERENCE BOARD's staff. Mr. Kipnis, Mr. Towber, and Maria Elena Gonzalez each contributed creative efforts to the analysis underlying this report. To the latter three, and to Walter B. Brown, our sincere thanks also for their diligent and imaginative preparations for each of the three surveys, for processing of the statistical analysis, and for preparing the final draft for publication. We wish further to acknowledge the substantial contribution made by Luke McSherry, Manager of THE CONFERENCE BOARD's Data Processing Center, and his staff.

We have benefited appreciably from comments submitted in response to the circulation of a preliminary draft. These have saved us from errors and assisted us in sharpening the analysis at numerous points. We are especially grateful to Mr. Alfred L. Green and his staff; to Dr. Harold Goldstein and his staff; to Mr. Stanley H. Ruttenberg, Manpower Administrator, Department of Labor, and his staff; to Dr. Joseph Waksberg, Statistical Methods Division, Bureau of the Census; to Mr. Edmund R. King, Assistant Treasurer, Eastman Kodak Company, and to his associates, Charles E. McConville and Charles Mulligan; to Professors Dorothy S. Brady, University of Pennsylvania, Charles C. Holt, University of Wisconsin, Jacob Mincer, Columbia University, and Albert Rees, Princeton University; to Craig M. Smith, Director, and Elizabeth Benz Croft, Principal Research Analyst, Rochester Bureau of Municipal Research; to Mrs. Charlotte Boschan, National Bureau of Economic Research; and to Peter E. de Janosi, Ford Foundation. The deficiencies that remain, needless to say, are our responsibility.

J.G.M.
D.C.

Part I:

Survey Plan and Statistical Findings

1.

Origin of Study and Summary

MANY OF THE problems that have claimed the attention of economists and statisticians in the first half of the current decade had their origin in the persistently high unemployment rate in a period of sustained business expansion. Measuring job vacancies is one of these.

As the evidence of a high level of unemployment accumulated, the accuracy of the official unemployment figures was challenged. To evaluate these criticisms, President Kennedy appointed a committee of eminent economists and statisticians not in the government service "to appraise employment and unemployment statistics." The committee was organized in November, 1961, and one year later submitted its report, *Measuring Employment and Unemployment*[1] (usually referred to as the Gordon Committee Report, after its chairman, Professor Robert A. Gordon). While the committee unanimously concluded that it was "highly impressed by the professional qualification and the scientific integrity and objectivity of those responsible for the system of reporting the official data on employment and unemployment,"[2] it also detailed ways of improving the information on employment and unemployment.

High on the list of recommendations was further research on the feasibility of measuring job vacancies. The committee reached this conclusion after noting that:

> "It is doubtful that any suggestion for the improvement of knowledge about the nation's labor markets was more frequently voiced to this committee than that calling for job vacancy statistics."[3]

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[1] President's Committee to Appraise Employment and Unemployment Statistics, *Measuring Employment and Unemployment*, U. S. Government Printing Office, Washington 25, D. C., 1962.

[2] *Ibid.*, p. 3.

[3] *Ibid.*, p. 199.

Why had the Department of Labor not previously responded to this interest in job vacancy statistics? This failure is traceable in part to an experience of the Bureau of Labor Statistics (BLS) in the mid-Fifties. Professor Arthur F. Burns, then Chairman of the Council of Economic Advisers, urged the BLS to develop a statistical series on job vacancies. In response to this urging, the BLS made a survey in 1956 to determine whether employers maintain records that would be adequate for reporting job vacancies. Of the 102 plants surveyed, 29 had formal records of the number of job vacancies, and another 54, without formal records, could give an estimate based on personal knowledge. Although 80% of the respondents on the first inquiry could provide the information, the BLS staff members concluded that "it would be impractical to initiate a regular mail collection of statistical data on job vacancies. Data resulting from such an attempt would certainly not be comparable in quality with that obtained in our related statistical programs in the manpower and employment field. . . . The principal difficulty is that employers do not keep records of vacancies comparable in accuracy or detail with their payroll records."[4]

With the benefit of hindsight, the conclusion seems based on inappropriate criteria and therefore unwarranted. A statistical series at the outset cannot be expected to meet the quality standards of a long-established series. Moreover, it seems to discount the indications from previous survey experiences that employers do develop adequate records once they become aware of the usefulness of the information.[5] At any rate, at the approach of fiscal year 1963-64 the BLS was committed only to study foreign experience in the collection and use of job vacancy statistics and to analyze the conceptual problems in defining a job vacancy. The Department's Bureau of Employment Security (BES) had no concrete plans for survey work in this field for that year.

In these circumstances THE CONFERENCE BOARD took the view that more progress could be made by a direct attempt to measure job vacancies in a significant labor market. Accordingly, late in 1963 the Board submitted an application to the Ford Foundation for support of an effort of actual measurement in the labor area of Rochester, New York. The Ford Foundation acted favorably on the Board's request in the spring of 1964 and the exploratory project was begun in the second half of June, 1964. At that time no other full sample survey was contemplated.[6]

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[4] *Ibid.*, p. 279.

[5] For discussion of employer records on job vacancies see Chapter 7.

This solitary position was soon overwhelmed by the mounting pressures on and in the Department of Labor for job vacancy data. In addition to the persistence of high unemployment there was the growing realization that the implementation of a fully articulated manpower program was severely handicapped by the lack of job vacancy data by occupation. Quite apart from operational needs it was expected that a continuing series on job vacancies would help to resolve the policy debate between the "expansionists" and the "structuralists"—that is, between those who argued that excessive unemployment can be eliminated by raising aggregate demand and those who argued it is due to structural imbalances which must be corrected to reduce unemployment to an acceptable level.

Presumably, these were some of the major considerations that persuaded the Secretary of Labor in August, 1964, to instruct the appropriate agencies in his Department to make a start in measuring job vacancies. The Bureau of Employment Security and the Bureau of Labor Statistics jointly designed a survey and selected 16 labor areas for the experimental program.[7] Thus THE CONFERENCE BOARD's survey, which appeared to be a solo effort when it was launched, soon became one of 17 surveys. This much more solid experimental base is, of course, most welcome.

The potential uses of job vacancy statistics are promising and are found in several areas. The uses that should be considered are those that would follow from a continuing collection of job vacancy statistics. A single survey, or one that is repeated only once or twice, can do little more than demonstrate whether or not the collection program is feasible.

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[6] Late in 1963, Professors Robert Ferber and Neil Ford of the University of Illinois initiated a pioneering survey in Champaign-Urbana, Illinois. Job vacancy and related turnover data were collected monthly between October, 1963, and May, 1964, from 17 employers. The results have been presented in two articles: "The Collection of Job Vacancy Data Within a Labor Turnover Framework," in *Employment Policy and the Labor Market*, edited by Arthur M. Ross, University of California Press, Berkeley and Los Angeles, 1965, pp. 162-190, and "The Time Dimension in the Collection of Job Vacancy Data" in *The Measurement and Interpretation of Job Vacancies*, National Bureau of Economic Research, Columbia University Press, New York, 1966, pp. 447-461. The U. S. Department of Labor, in conjunction with affiliated state agencies, conducted two preliminary studies in Chicago and Buffalo. The Chicago study is described in an article by Elizabeth J. Slotkin, "Problems in the Collection of Data on Job Vacancies: Chicago Pilot Study," *The Measurement and Interpretation of Job Vacancies*, pp. 331-347.

[7] See statement of Vladimir D. Chavrid in U. S. Congress, Subcommittee on Economic Statistics of the Joint Economic Committee, *Job Vacancy Statistics, Hearings*, 89th Congress, Second Session, May 17 and 18, 1966, pp. 59-97. Hereafter this source will be referred to as *Job Vacancy Statistics, Hearings*.

A. GUIDES TO NATIONAL POLICY

A statistical series on job vacancies, together with other economic statistics, could provide more complete and accurate insight into the condition of the labor market than information now available. As mentioned above, there was an extensive debate, in the first part of the Sixties, on the fundamental reason for the large extent of unemployment in the economy. As we have already noted, one school held that the basic reason was insufficient aggregate demand, while another blamed it on structural bottlenecks. Statistics on job vacancies, together with other economic data, promise a resolution of this question and similar problems of national policy.

Structural difficulties in the economy, resulting in regional or occupational imbalances in the labor market, could be detected through statistics on job vacancies and unemployment. A large amount of unsatisfied demand for labor in one area, shown by many job vacancies there, accompanied by a large amount of unsatisfied supply of labor in another area, shown by heavy unemployment, would indicate regional imbalance. Similarly, a large number of job vacancies in one occupational group, accompanied by extensive unemployment in another, would indicate occupational imbalance.

Should aggregate expenditures be raised to reduce unemployment? No single statistic will furnish the correct answer to this difficult question, but a statistical series on the number of job vacancies should help by indicating the extent and direction of movement in the degree of "tightness" in the labor market. If total vacancies are increasing faster than total unemployment, the labor market is tightening; if the difference between vacancies and unemployment is decreasing, the market is loosening. At some point in a tightening labor market, wage rates will rise and inflationary pressures result. Job vacancy statistics will permit a far more complete analysis of this process than has been possible heretofore.

A companion measure would indicate the total amount of friction in the labor market resulting from structural and other sources, and would show whether this total friction is rising or falling. The amount of offsetting between aggregate vacancies and aggregate unemployment (or the number of vacancies equaled by the number of unemployed persons) shows the extent of friction. This aggregate measure reflects the several types of imbalance mentioned above, showing the magnitude of the problem in the entire economy, as well as whether it is increasing or decreasing.

The planning of a national manpower program, covering vocational training, retraining, counseling, and assistance for geographic transfer, could be aided by statistics on job vacancies. An evaluation of the benefits and costs of such a program is essential to efficient planning and could be done more expeditiously with the information gained from job vacancy statistics, by region and occupation, in conjunction with unemployment data. The selection of training programs, choosing the occupations and regions in which they should be placed, could be helped by knowledge of job vacancies and corresponding unemployment totals, appropriately classified.

B. INFORMATION FOR JOB-SEEKERS, EMPLOYERS, PLACEMENT AGENCIES, AND COUNSELORS

The matching of persons and jobs is a complex process that depends heavily on the information available to all the parties. An increase in information, in the form of numbers of vacancies by occupation and skill requirements, can help to improve the matching process. An easily overlooked use of job vacancies is its potential use for job-seekers. The information available to the job-seeker is often vague, and a clearer picture of the relevant labor market is desirable. A job-seeker wants to know where the jobs are located and what are the skill and other requirements. Similarly, employers may gain by knowledge of the total unsatisfied demand for a given type of worker, particularly in relation to the corresponding supply of unemployed.

Placement agencies may benefit in at least two ways from the collection of job vacancy statistics. By obtaining more complete knowledge of the job market, they can perform the direct functions of placement more effectively. In addition, if they can obtain additional job orders corresponding to the vacancies reported, they can provide more alternatives to persons who come to them seeking jobs.[8] Job vacancy data could also contribute to the development of (a) vocational guidance and counseling at all educational levels and (b) training and retraining programs.

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[8] This possibility has been explored by the Department of Labor in some of its job vacancy surveys.

The uses outlined in this section demand local area statistics—that is, reliable statistics on numbers of job vacancies by occupational and skill requirements for individual labor markets. The effective use of job vacancy statistics as guides to national policy also requires local area detail in many cases. For example, if a rise in friction in the national labor market were found, it would be important to be able to determine the reason for the rise. This could only be done by examination of detailed local area statistics. The conclusion to be drawn is that adequate reliable statistics should be obtained for each important labor market area in the nation.[9] National totals would then be obtained by aggregating job vacancies for all the labor markets surveyed with some supplementation for small towns and rural areas.

If the availability of job vacancy statistics helps the formulators of economic policy, administrators of various manpower programs, placement agencies, and individual employers and job-seekers to perform their respective tasks more effectively, the collection of these statistics on a continuing basis certainly deserves serious consideration and exploration. Moreover, experience in the past few decades with newly developed statistical series suggests that many significant but unanticipated uses emerge as the analysts make use of the new data. There is a high probability this would also happen with job vacancy statistics.

C. OUTLINE OF REPORT

This chapter and the next four together form Part I of the report: "Survey Plan and Statistical Findings." The remainder of this chapter summarizes the principal statistical findings of the three surveys, recommendations for future surveys, and conclusions on the feasibility and desirability of measuring job vacancies.

Monroe County, New York, was chosen for the NICB survey. At the inception of the study, Monroe County constituted the Rochester Standard Metropolitan Statistical Area.[10] The economic characteristics of this area are described in Chapter 2. This is followed by a chronology and description of the major stages in the survey work in Chapter 3, and in Chapter 4 the principal empirical findings are presented. (The detailed survey findings are set down in 16 tables in Appendix D.) Part I concludes with a discussion of survey cost, local community uses of job vacancy data, the readiness of employers to participate in a continuing program, and the possible use of help-wanted advertising and unfilled jobs on file with the public Employment Service as substitute measures for job vacancies (Chapter 5).

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[9] If a national program of job vacancy data collection is begun, it will be highly desirable to develop corresponding local area unemployment data. At the present time only estimates of the total number of unemployed are available for individual labor markets; the characteristics of the unemployed are known only for the entire nation. The development of more detailed statistics on *employment* by occupation in labor market areas is also highly desirable.

Part II—"Some General Problems and Implications of the Rochester Experience"—comprises Chapters 6 through 8 and is concerned with a number of special problems encountered in collecting job vacancy statistics. The problems discussed include the definition of a job vacancy (Chapter 6); the accuracy of employer response and alternative survey techniques (Chapter 7); and the selection of a sample and the magnitude of sampling variability (Chapter 8).

Just as the Current Population Survey is a means for collecting a variety of information in addition to its primary collection of data on current employment status, so can the job vacancy schedule be used to collect supplemental information. Appendix A describes one example of this possibility—the effect of structural and technological change on occupations and employment based on data collected from Rochester employers along with the job information. The remaining appendixes are devoted to the presentation of reporting forms with supporting documents (Appendix B); description of the sample design (Appendix C); and the detailed statistical tables (Appendix D).

D. THE ROCHESTER AREA

As mentioned above, Monroe County, New York, which contains the city of Rochester, was chosen for the NICB survey. The special characteristics or features of the Rochester area are important insofar as they affect the generality of the conclusions that may be drawn from our study. The question is whether Rochester is sufficiently similar to other metropolitan areas to permit a judgment on the feasibility of job vacancy surveys. A search for a "typical" or "average" area is of course fruitless. Further, the structure of the labor market and specific vacancy data that may be collected are not pertinent to the question; only the conclusions on survey feasibility are.

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[10] The definition of the Rochester Standard Metropolitan Statistical Area was changed in 1965, when the three adjoining counties of Wayne, Livingston, and Orleans were added. Our study is confined to Monroe County.

The county is heavily industrialized and urbanized. Manufacturing of durable goods—particularly in the "photographic, optical, and instruments" industry—is especially important, and skilled workers represent a large fraction of employed workers. The area may be further characterized as very prosperous, with low unemployment and high average income and educational attainment. A detailed comparison of the characteristics of Rochester with those of other metropolitan areas in New York State does not, however, reveal any sharp contrasts.

The proportion of nonwhites in the population is reasonably typical of the state. The proportion of foreign-born in the population is rather high but is the result, in large part, of migration during a period many years removed. The changes that have taken place in national employment since August, 1965 have made the current level of prosperity in many labor areas approximate the level in Rochester in 1965.

One special characteristic worthy of mention is the presence of a highly developed and effective employers' organization in the area, the Industrial Management Council of Rochester, which aids in placement and other aspects of employment.

E. HIGHLIGHTS OF FINDINGS

A series of preliminary interviews were obtained with 27 firms during September and October, 1964. We obtained detailed information on hiring practices, record keeping, and characteristics of job vacancies from the cooperating employers.[11] The conclusions drawn from the interviews guided our approach to later survey work. Our final questionnaire form and interview technique were tested by visiting a sample of employers in January, 1965. This pretest was supplemented by a quality check on the accuracy of the data obtained. The quality check, conducted immediately after the pretest with 14 of the 40 employers, involved careful questioning to determine the accuracy of the vacancy information.

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[11] The preliminary interviews are summarized in an article "Conceptual and Measurement Problems in Job Vacancies: A Progress Report on the NICB Study," *The Measurement and Interpretation of Job Vacancies,* pp. 405-445.

Three full-sample surveys of about 400 employers followed. Generally, the same employers were interviewed in each survey. The surveys collected information as of February 12, May 14, and August 13, 1965. Almost all data were collected by personal visits to the employers' offices and all interviews were completed in the two weeks following the reference date. The following points summarize some of the findings of our study:

(1) The definition of a job vacancy used—an unfilled job that an employer is actively seeking to fill by hiring a person outside his organization—is operational, is understood by employers, and elicits reasonably accurate response.

(2) In our quality check, some variation in the characteristics of job vacancies was found, but in no case was there a change in the number of persons sought. As we reinterviewed the same employers in our three large surveys, we had occasion to verify the accuracy of reports in the previous surveys; the accuracy of the information obtained is quite high, according to this measure.

(3) The Rochester employers clearly demonstrated their willingness to respond to a voluntary statistical reporting program on job vacancies. The response rate was 99%. This conclusion may depend upon the collecting agency and may also reflect the fact that Rochester is a tight labor market.

(4) The estimated total number of job vacancies in the three surveys ranged from just under 8,000 to nearly 9,000, representing about 3% of all jobs in the county, filled and unfilled.

(5) A sample of 400 employers, selected by predetermined ratios from different employment size classes, is adequate to provide reliable estimates of the total number of vacancies.

(6) The vacancy rate, or proportion of jobs unfilled on the survey date, did not differ greatly between firms of different size.

(7) The translation of occupational titles supplied by employers into the standardized classifications of the *Dictionary of Occupational Titles*[12] is practicable.

(8) Thirty-six per cent to 45% of all vacancies, depending upon the survey month, were open to those without high school diplomas.

(9) From 14% to 25% of total vacancies were available only to persons who were college graduates. (The rather wide range results from seasonal variation in vacancies for school teachers.)

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[12] U. S. Employment Service, *Dictionary of Occupational Titles*, Vol. I, Definition of Titles, and Vol. II, Occupational Classification and Industry Index, Second Edition, 1949.

(10) About one half of the vacancies required no related work experience of the prospective employees. A large proportion of these, however, required the completion of at least 12 years of schooling. Similarly, a large proportion of the openings with comparatively low educational requirements required some related work experience.

(11) From 16% to 22% of all vacancies required neither high school graduation nor related work experience. But a large proportion (56% to 73%) of these were in unskilled and service occupations.

(12) Of those vacancies reported as of mid-August 1965, 27% had been open at least since mid-May—that is three months or more—and 12% had been open at least since mid-February—or six months or more. This is one possible measure of the importance of hard-to-fill jobs.

F. ESTIMATED COSTS AND BENEFITS

From our experience in the Rochester area, we have estimated the cost of a continuing quarterly job vacancy survey in the 146 major metropolitan areas of the United States with a labor force of at least 50,000 persons.[13] The estimates assume that the survey has passed the initial stage of organization, planning, and training of personnel. For a mail survey we estimate an annual cost of $7.1 million; for an interview survey, $9.5 million. We believe that it will always be necessary to visit some employers personally in order to obtain accurate data. An approximate estimate for the continuing collection of accurate data is thus $8 million to $8.5 million per year.

The uses of job vacancy statistics, as guides to national policy and to provide information to participants in hiring and counseling, have already been described above. The potential benefits of local use are less well publicized than benefits at the national level; these include aid in placement and manpower planning (both by community organizations and employers), and a general increase in the information available on the state of the local labor market. In an attempt to learn some of the dimensions of local uses, we asked all employers responding in our surveys, as well as about 60 schools and other community organizations in Rochester, about (a) the value of our surveys at the local level and (b) the specific uses to which the data might be put.

Slightly less than one fifth of all employers (but nearly one third of those employing 250 or more) stated that job vacancy data would be of direct use in their own operations. As many as 72%, however, believe that such data would be valuable to community organizations. That is, while the information was of direct use to a modest minority of employers, most thought that training, guidance, and other labor market functions could be accomplished more effectively with the aid of job vacancy data than without. The community organizations, including schools, concerned with manpower planning and training stated emphatically that job vacancy data were useful in carrying out some of their program objectives. As a result of this interest, the Industrial Management Council of Rochester plans to carry on a continuing survey of job vacancies among its member firms, and to make the survey results available for community use.

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[13] Some supplementation will be necessary, to arrive at a national total, for jobs in small towns and rural areas located outside the 146 major metropolitan areas. The cost of this supplementation is not included in our estimates.

G. FEASIBILITY OF A CONTINUING SURVEY

The principal conclusion of this report is that accurate data on job vacancies can be obtained from sample surveys of employers. This is the consensus of the staff, both interviewers and analysts, concerned with the NICB surveys. The costs of data collection, mentioned in the preceding section, do not seem exorbitant compared with the possible benefits that may be derived—particularly in comparison with other data collection programs on the current status of the labor force.

Another dimension of feasibility is the willingness of employers to cooperate in a continuing data collection program. We have asked employers in the Rochester area about their willingness to furnish such data, quarterly, on a long-term basis. Of those responding to the question, 62% replied "yes"; these employers accounted for 85% of the total employment of companies responding to the question. As noted earlier, the willingness to participate in a job vacancy survey may depend on the collecting agency and on the tightness of the labor market.[14]

Large employers are more interested in job vacancy data than are small employers, as evidenced by attention paid to published reports and willingness to cooperate in the collection of the data. The view is more common among large employers than among small employers that the data are valuable either to them directly or to the community.

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[14] The decision of the Industrial Management Council to conduct a continuing survey is noteworthy in this connection.

Almost all of those who were willing to cooperate indicated that they would reply by mail although this often takes more of an employer's time than does a personal interview.

In summary, a nationwide data collection program appears to be a feasible operation. The costs seem to be within acceptable limits, and the benefits—in terms of supporting placement activities, a variety of manpower programs, and formulation of economic policy—are at least commensurate with the estimated cost. Moreover, there seems to be no adequate substitute for job vacancy statistics, to judge by our limited analysis of two sets of statistics considered by some as possible proxies.

One set is an index of help-wanted advertising in newspapers, a continuing series now compiled by the NICB for 52 cities, including Rochester. This series is based on a count of the number of advertisements appearing in particular newspapers.

THE CONFERENCE BOARD has a help-wanted index for 12 of the 16 cities surveyed by the Department of Labor for job vacancies. For these 12 cities we compared the per cent change in job vacancies between survey rounds with the per cent change in the help-wanted index for the same period. The help-wanted index rose in all 12 cities, yet job vacancies declined in 4 cities. Further, the difference between the per cent change in the help-wanted index and the per cent change in job vacancies was substantial in 9 cities (positive in 7 and negative in 2).[15] Thus in only three, or one fourth of the 12 cities, would the relative change in the help-wanted index have approximated that of job vacancies. And even in these three cities the index could not provide the number of job vacancies unless there were repeated job vacancy surveys to establish bench mark numbers.

In Rochester, one would not expect a close relationship between the help-wanted index and job vacancies because the larger employers, mostly engaged in manufacturing, are affiliated with the Industrial Management Council, which requests its members not to advertise for employees in the Rochester newspapers. Accordingly, we tested the Rochester help-wanted index as a predictor for job vacancies in the nonmanufacturing sector for two periods—mid-February to mid-May, and mid-May to mid-August. In the first period the index projected a 50% increase; the actual movement was a decrease of 7.6% in job vacancies. In the second period the index was within acceptable range of the target—a projected decrease of 10.8%, compared with an actual decrease of 12.3%. A 50% record of success in this matter is not acceptable. Moreover, should the index ever prove to be an adequate predictor of the number of vacancies, essential information on occupations would still be lacking.

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[15] We are considering a difference of 10 percentage points or more between the two measures to be substantial.

The second measure has the important advantage of providing occupational detail. It consists of the number of openings contained in job orders on file with the public Employment Service on a given date. By means of a special tabulation provided by the Employment Service (ES) in Monroe County, the number of unfilled openings in the ES job orders[16] and the number of job vacancies as of mid-May and mid-August were compared. On the first date, unfilled jobs in ES orders amounted to 56% of estimated job vacancies; on the second date, they amounted to only 37%. The comparable fraction for 14 of the areas surveyed by the Department of Labor was one third. As to occupational composition, the record is no better. In the Rochester area, there were substantial differences in the occupational composition of unfilled openings in ES job orders and job vacancies, even at the level of broad occupational classifications.

Thus, the conclusion seems warranted that if job vacancy data are worth having, they must be obtained by sample survey of employers.

H. RECOMMENDATIONS FOR FUTURE SURVEYS

Our recommendations may be summarized under three headings: the definition of a job vacancy and type of data to be collected; data collection techniques; and sample design and processing of data.

Type of Data to Be Collected

We recommend collection of data on vacancies with future starting dates, for which persons are sought on the survey date. These data are valuable in their own right for the added dimension they give to the demand for labor; they are also very useful in obtaining accurate information on vacancies for current starting dates. We suggest that layoffs be omitted from data collected in vacancy surveys—for the present time at least or until additional experimental work is done on this aspect of the labor market. Reasonably adequate data on layoffs, as well as on persons hired to begin work on future dates, can be obtained from the Current Population Survey and utilized in conjunction with vacancy information for special purposes. In addition, we urge that additional information be collected on search by employed persons, both for the direct usefulness of such data and to provide meaningful comparisons with vacancy information.

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[16] A job order, in ES terminology, is a request for a specified number of persons (one or more) for jobs with the same requirements. The number of job orders, therefore, is usually less than the number of persons sought.

Method of Collection

We urge that data be collected initially by personal interview. Subsequently the change to mail questionnaire can be made for most employers. Our experience suggests that some employers will always require personal interview for accurate information; this observation applies to a few large firms and to most very small firms.

The training of interviewers and coordination of data collection leads to the suggestion that, in the beginning, small samples be collected in individual labor market areas, and then expanded later. In this way a relatively small staff of interviewers can expand the sample as the change is made to a mail questionnaire. A major effort is desirable to obtain an up-to-date list from which to draw the sample. It is very desirable to obtain as complete a list as possible, particularly for new firms just entering the labor market, and also to construct a list which incorporates the appropriate definition of the firm, allowing for subsidiaries, multiplant firms, and similar problems.

Sample Design

An approximation to optimum sample design seems highly desirable. The cost per vacancy obtained and the variability of vacancies differ greatly among firms of different size and also from industry to industry. We therefore suggest that several strata be used in the design of an efficient sample, by size of employer and industry division. It seems desirable to vary the industry sampling ratios to allow for seasonal and other intertemporal variability in job vacancies. An "optimum sampling" design may dictate very small sampling ratios for small employers; but these should be avoided because use of fine categories of classification of job vacancies can produce erratic results if large blow-up factors are applied to the individual reports of small employers.

Finally, we recommend careful attention to computing and analyzing the variability of job vacancy data. Measures of the sampling variation should be computed directly from the sample for use in evaluating the accuracy of sample estimates and also for use in sample design.

2.

Rochester: Its Economic Profile in the Mid-Sixties

How much we can generalize from the survey results and experience in the Rochester area depends in part on the characteristics of the population, on the industrial and occupational composition of the area economy, its degree of prosperity, and institutional arrangements. The more Rochester appears to deviate from the norms for a city of its size, the less broadly and firmly one can generalize from the survey findings. This chapter will describe socioeconomic characteristics of the area. It will also appraise the effect of any atypical attributes on the conclusions about survey feasibility.

A. POPULATION: SIZE, DISTRIBUTION, AND CHARACTERISTICS

According to the *Census of Population, 1960*,[1] 586,387 persons lived in Monroe County, New York, which we shall call the "Rochester area." Somewhat more than half (54%) of that number resided in the city of Rochester; the remainder, amounting to 268,000 persons, lived in the suburban towns, villages, and countryside of Monroe County. Between 1950 and 1960 the Census Bureau reports a population loss of 4% for the city of Rochester and a gain of nearly 73% for the remainder of the county. For the entire county the gain amounted to 20%. The Monroe County Planning Council projects a continuation of these trends for the decade of the Sixties.[2] Their projection for 1970 calls for a population of 308,150 in the city of Rochester, a ten-year decline of 3%, and for a growth rate of 48%

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[1] U. S. Census Bureau, *1960 Census of Population*, Vol. I, Characteristics of the Population, Part 34, New York, 1963.

[2] Monroe County Planning Council, *Economic Study, Rochester-Monroe County Metropolitan Area, 1960-1980*, March, 1963, Table II-1.

for the rest of the county. If these projections prove to be accurate, only 44% of the county's population would be making their homes in the city of Rochester, thus reversing the population position of the central city over the decade.

These projections were completed before the results of the special population census of April 1, 1964 were available.[3] Thus a partial check on the accuracy of the projections is possible. The population count for the city of Rochester was 305,849 in April, 1964—a 4.0% decline in the four-year interval, and about 2,300 lower than the projected figure for 1970.[4] By April, 1964, the population of Monroe County, excluding Rochester, amounted to 319,279, a four-year gain of 19.2%. The increase for the entire county was 6.6%.

The figures suggest that the projected gain for the 1960-1970 decade for Monroe County may be too high and that the population loss in the central city may be too low. At any rate, by April, 1964, less than half (48.9%) of the county's population resided in the city of Rochester.

Some Social Characteristics

For understanding of some aspects of current labor market conditions, certain characteristics of the population are relevant. Again, it is the 1960 Census of Population that provides the most recent reading, with one exception.

As of 1960, one tenth of the Rochester area population was foreign-born—the highest of all the upstate metropolitan areas (Table 2.1).[5] About two thirds of the foreign-born came from four countries, ranked in descending order of importance: Italy, Canada, Germany, and Great Britain.[6] The foreign-born, it should be noted, are relatively older, as a group, than the native population. In 1960 their median age was about 58 years, compared with a median age of about 30 years for the native white population. As one would expect, the foreign-born white population has been declining in the postwar period—from 62,041 in 1950 to 57,859 in 1960.

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[3] See, U. S. Census Bureau, *Special Census of Monroe County, New York, April 1, 1964*, Series P-28, No. 1376, Suitland, Maryland, October 13, 1964. The text figure for the city of Rochester is a corrected figure.

[4] The projections seem to imply the reversal in the population of the central city would not occur until the decade 1970-1980.

[5] All tables referred to are found in the appendix to this chapter.

[6] *1960 Census of Population*, Vol. I, Part 34, Table 99.

The other ethnic group in the Rochester area which warrants special mention—nonwhite, the vast majority of whom are Negro—has been growing, absolutely and relatively. In 1950 they numbered 8,247, or 1.7% of the population; in 1960, 25,067 or 4.3%; and in 1964, 33,492 or 5.4%. Although as many as 95% of all nonwhites in Monroe County resided in the city of Rochester in 1950, the concentration percentage had advanced ten years later to 97% and remained unchanged in 1964. The percentage of nonwhites in the Rochester area in 1960 was significantly lower than the percentage for Buffalo but well above the percentage for the other upstate metropolitan areas (Table 2.2).

A tripling of Negro (nonwhite) population in ten years implies a large in-migration. The latter may be estimated by adding the natural increase in the nonwhite population between 1950 and 1960 to the 1950 Census figure for nonwhites and then subtracting this total from the 1960 Census figure for nonwhites. The difference represents net migration—in-migration if it is positive, and out-migration if it is negative. On this basis the net in-migration of nonwhites amounted to 10,445, or about two thirds of the decadal increase in the nonwhite population.[7]

The figures from the Special Population Census on April 1, 1964, show that these postwar trends—high rate of growth in the Negro population, de facto residential segregation, large proportion of recent arrivals with the attendant difficulties of quickly satisfying enhanced aspirations—have continued in the Sixties.

With respect to the total population of Monroe County, however, recent migrants accounted for less than 10% of the 1960 population five years and over, the second lowest percentage of all the metropolitan areas in New York State.

In the matter of education, the population of the Rochester area would be rated as better educated than those in other SMSA's in the state by the usual statistical measures from the census enumeration. According to these measures the Rochester area population has the highest percentage in school for the 14-17 age group, and ranks next to the highest in median school years completed and per cent completing four years of high school (Table 2.1).

The only other demographic consideration that needs to be mentioned at this point is the labor force participation rate, i.e., the per cent of the population aged 14 years and over in the labor force. These statistics, not standardized for age, show that the participation rate in the Rochester area was among the highest in the state, both for men and women and for whites and nonwhites (Table 2.3).

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[7] For the relevant statistics for this computation see Rochester Bureau of Municipal Research, *Community Renewal Program*, Economic and Population Studies, Vol. 1, Rochester, New York, 1963.

Perhaps even more relevant to our discussion is the unemployment rate. For the Rochester area, the unemployment rate of the male labor force—used as an index of inter-area unemployment—equaled 3.9% of the labor force in April, 1960. The only area in the state with a lower rate was Binghamton with 3.8%. In the neighboring areas of Buffalo and Syracuse the rates were 6.3 and 5.3, respectively (Table 2.3).

Thus the population of the Rochester area had a relatively high level of educational attainment, a comparatively high percentage committed to economic activity, and a low rate of unemployment. All of this is consistent with the area's having the highest median family income in the state in 1959.

B. INDUSTRY STRUCTURE

The employment estimates prepared monthly by the Division of Employment of the New York State Department of Labor reveal the broad industry structure of the Rochester area. The most recent datum available at the time of writing is an average of 12 monthly readings for 1964. Since our interest is focused on metropolitan areas, agriculture, forestry, and fisheries are excluded.

Rochester's industry structure is distinguished by its relatively large concentration on manufacturing industries, particularly those producing durable goods. This was offset by less-than-average use of manpower in government and transportation and public utilities.

Manufacturing was the single most important industry sector not only in Rochester but also in the other major metropolitan areas in the state (Table 2.4). In Rochester, however, its relative importance is unusually high—manufacturing industries provided 46% of all nonagricultural employment. The average percentage for the five upstate areas was 37.5%, and for New York City, 25%. Even more exceptional was the concentration on the durable goods industries—three fourths of all manufacturing employment in Rochester, compared with two thirds in four upstate areas, one half in the Albany-Schenectady-Troy area, and one third in New York City.

The postwar changes in Rochester's industrial structure are suggested by the changes between 1950 and 1960 in the industrial attachments of employed persons as reported in each of these two Censuses of Population. Employment in the area increased 14% over the decade. In Table 2.5, all industries distinguished in the Census of Population are classified into three categories: those that expanded employment by 14% or more; those that expanded by less than the average; and those that employed fewer employees on April 1, 1960, than on April 1, 1950.[8] As in most metropolitan areas, the fastest-growing industries were the services, whether catering to business or to households. Among the latter this was particularly true of medical and health services, educational services (both public and private), and other professional services. Financial services and communication industries were also typically undergoing rapid expansion in most areas.

While manufacturing as a group showed a less-than-average growth of 10%, this was an exceptionally good performance for an area located in the old manufacturing belt. Better-than-average growth occurred in the three durable goods industries—machinery, except electrical; electrical machinery, equipment, and supplies; and motor vehicles, equipment, and parts—and two nondurable industries—food and kindred products; and printing, publishing and allied products.

Those industries in the Rochester area with shrinking employment opportunities were representative of declining industries elsewhere. This has been the character of the extractive industries, primary metals, rail and water transportation, and those branches of retail trade formerly dominated by the small proprietor and now by the supermarkets. The latter example prompts the caution that declining employment is not necessarily identified with declining activity. In some industries it may mean that the rate of increase in man-hour productivity far outstripped the growth rate in its output.

The exceptionally large share of manufacturing activity in the economy of the Rochester area justifies a closer examination, particularly since the preliminary results of the *1963 Census of Manufactures* are now available. Not only is the manufacturing share unusually large, but also it is the only metropolitan area in New York State to show a gain in manufacturing employment between 1958 (a year marked by a recession) and 1963 (Table 2.6). There was a further increase of 3.3% in 1964, and this expansionary trend has continued into 1965, according to estimates of the Division of Employment of the New York State Department of Labor.[9]

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[8] It should be noted that employed persons classified as "industry not reported" numbered 9,442 (4.1% of all employment) in 1960 and 2,636 (1.3%) in 1950.

All areas reported a gain in terms of value added. Only a small part of this difference between the movement of employment and value added can be explained by higher prices in 1963 than in 1958. The implicit deflator index for GNP in manufacturing was 100 in 1958 and 102.9 in 1963.[10] Much the larger part of the difference, however, reflects the substantial gains in man-hour productivity. Even so, it is worth noting that the percentage increase in value added in the Rochester area—52%—greatly exceeded the comparable percentages for the other areas.

Instruments and related products, which includes photographic and optical production, clearly is the dominant industry in the area (Table 2.7). About one third of all manufacturing employment in both 1958 and 1963 was provided by this industry group. At the two-digit level of classification three other groups employed as many as 10,000 persons each: machinery, except electrical; electrical machinery; and food and kindred products. These four accounted for nearly two thirds of manufacturing jobs in 1963.

It was noted earlier that the durable goods industries employed about twice the number employed in the nondurable goods industries. In 1958, the former gave employment to 62.7% of the manufacturing total, excluding administrative and auxiliary employees, and five years later to 65%. The expansion in employment among the durable goods group was rather general; five of the seven groups (two-digit classifications) employed more in 1963 than in 1958. Among the nondurable goods industries only one of six (chemicals and allied products) expanded employment. As in manufacturing generally throughout the nation, the rate of employment gain was highest for those employed in administrative and auxiliary supporting functions—in the Rochester area a gain of 50%.

Perhaps a more helpful insight into the character of manufacturing industries in the Rochester area is afforded by an industry classification that groups industries (four-digit classifications) by dominant locational factor. This approach distinguishes eight dominant locational factors:

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[9] For the first 9 months of 1965 employment averaged 258.1 thousand compared with 245.3 for the same months of 1964, a gain of 5.2%.

[10] *Survey of Current Business*, August, 1965, U. S. Government Printing Office, Washington, D. C., 1965, Tables 15 and 16.

(1) Inertia

TRANSPORT COSTS:

  (2) Local or regional markets—consumer goods
  (3) Local or regional markets—producer goods
  (4) National markets—raw material oriented
  (5) National markets—other

LABOR SUPPLY AND COST:

  (6) Skilled labor
  (7) Unskilled labor

(8) External economies
(9) Unclassified

Only the first eight have analytical significance. The ninth is merely a catchall for those industries whose dominant locational factor was not determined. We shall assume the designations are self-explanatory, for a full explanation would lead us far afield.[11]

The following classification shows the relative distribution of manufacturing employment in 1958 according to industries classified

Per Cent Distribution of Manufacturing Employment (1958), by Dominant Locational Factor in Selected Geographic Areas

Dominant Locational Factor	Employment in		
	Rochester Area	Upper Middle Atlantic Region	Continental U. S.
1. Inertia	2.2%	12.3%	12.3%
Transport costs:			
2. Local or regional markets —consumer goods	8.7	7.0	8.1
3. Local or regional markets —producer goods	2.3	6.3	6.7
4. National markets —raw material oriented	1.4	10.4	16.2
5. National markets —other	11.3	14.5	19.1
Labor supply & cost:			
6. Skilled labor	48.5	5.8	4.2
7. Unskilled labor	0.9	2.1	4.6
8. External economies	14.8	26.8	16.2
9. Unclassified	9.9	14.8	12.6
All factors	100	100	100

Source: Special tabulations prepared for NICB by Industry Division, Bureau of the Census from *1958 Census of Manufactures.*

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[11] Those interested in definitions will find an excellent discussion in Robert M. Lichtenberg, "Locational Pulls on Manufacturing," Chapter II of *One-Tenth of a Nation—National Forces in the Economic Growth of the New York Region*, Harvard Universty Press, Cambridge, Massachusetts, 1960.

by dominant locational factor for the Rochester area, the Upper Middle Atlantic Region (Connecticut, New Jersey, and Pennsylvania), and Continental United States. From these percentages it is clear that manufacturers whose location is dominated by the availability of a skilled labor supply have figured much more importantly in the Rochester area (nearly one half) than in its region or in the nation. Substantially underrepresented in the Rochester area are industries dependent on external economies and those serving national markets that are sensitive to transport costs. Virtually nonexistent are those pulled to the supply of relatively cheap semi- and unskilled labor.

The locational pull of a skilled labor supply does not depend on the existence of geographic wage rate differentials but rather on the existence of an adequate supply of skilled personnel. Actually there is little geographic variation in the wage rates of the skilled.

It does not necessarily follow, however—as the data in the following section show—that in Rochester skilled workers are numerically a larger share of the labor force than they are in the other metropolitan areas in the state.

C. OCCUPATIONAL STRUCTURE

The most recent data on employment by occupation refer to April, 1960, as reported in the *1960 Census of Population.* Since occupational structure changes slowly, the use of a 1960 reading probably entails little disadvantage.

The data for the major metropolitan areas in New York State suggest that the absolute range of the distributions for a given broad occupational classification is narrow, and that the distribution for Rochester does not appear to be exceptional (Table 2.8). The employed population of the Rochester area worked in about equal numbers in white-collar and in manual and service jobs. Among the white-collar jobs, clerical and kindred and sales represented one fourth of all jobs, and professional, technical, managers, and proprietors' jobs slightly more than one fifth.

The craftsmen, foremen and kindred workers, which we take to be the skilled workers, accounted for one third of manual and service jobs and 16% of all jobs. About 12% of all jobs may be classed as unskilled.

To provide a fairly precise notion of postwar changes in Rochester's occupational structure, Table 2.9 lists all detailed occupations that either expanded or declined by a minimum of 400 between April 1, 1950, and April 1, 1960. The list of expanding and contracting occupations contains no surprises, but the size of some of the changes, both absolute and relative, might not have been anticipated. For example, the professional and technical occupations increased by nearly 11,000, with almost one half of the gain occurring in engineering and teaching professionals. The decadal gain for the entire group amounted to one third of all jobs in this group in April, 1960.

The changing organizational structure of business is reflected in the loss of 3,400 proprietors, mostly in retail trade, and a gain of 2,145 jobs as salaried managers and officers. It is also clear that Rochester has not escaped the explosions of paperwork and babies. One fifth of the jobs in clerical and kindred occupations in 1960 did not exist 10 years earlier. Nearly one third of this increase, over 2,500 jobs, was found among stenographers, typists and secretaries. Among private household workers, baby-sitting was the only expanding occupation, an increase of better than 1,000 jobs.

Blue-collar jobs present a different aspect. The more skilled occupations (craftsmen, foremen, and kindred workers) did scarcely better than hold their own over the decade with a gain of 350 jobs. Substantial increases in the number of foremen (particularly in manufacturing) and of mechanics and repairmen, not elsewhere classified, were offset by job losses among carpenters, machinists, painters, and tailors. Among the semiskilled occupations, represented by operatives and kindred workers, the shrinkage in jobs amounted to 2,518, with the losses distributed over a large number of particular occupations. Jobs for laborers (mostly unskilled) also declined. While the absolute number of jobs that disappeared, about 600, was less than the loss of semiskilled jobs, the relative loss was considerably larger, 9% and 5%, respectively, based on the number of jobs in 1960.

The increased importance of women employees in the economy of the Rochester area is shown by the greater expansion of women at work—a net change of 16,000 jobs over the decade, compared with 13,000 for the men. The gain in men's jobs represented less than 10% of the number of employed in April, 1960, while the gain in women's accounted for 20% of the women employed on the same date.

The postwar changes in the occupational structure of Rochester's manufactures can be shown only in terms of broad occupational groups and only by reference to the Censuses of Population for 1950 and 1960 (Table 2.10). With respect to the men, whose number increased by one eighth, there were striking changes in three of the eight occupational groups. Professional and technical workers occupied 10.5% of all manufacturing jobs held by men in 1950, and as much as 15.6% 10 years later. The other substantial increase occurred in sales workers—from 3.2% to 5%, with the absolute gain amounting to 1,500. These relative gains were offset by a large relative decline, from 37% to 32% for operatives. This change entailed a moderate absolute loss of 700 operatives' jobs. Among the skilled workers (craftsmen and foremen) there was a modest absolute gain of 650 jobs, which was not sufficient to prevent a modest relative decline. The changes in the unskilled were small declines but these may not be statistically significant in view of the large increase in the number of occupations not reported.

The role of women in Rochester's manufacturing diminished slightly during this decade, from 30.5% in 1950 to 29% in 1960. This trend was opposite to that for their role in the entire economy of the Rochester area, as we have noted above. Among manufacturing jobs held by women the clerical jobs grew in importance from 30% to 34%, while, as in the case of jobs by men, there was an absolute and relative loss in the number of operatives' jobs filled by women.

These broad occupational shifts in the Rochester area during the Fifties largely mirror the changes that occurred nationally. While there are no firm data on employment by occupation since 1960, there is a high probability that these trends have persisted into the Sixties, but perhaps at a diminished rate. If this is the case, one would expect that in 1965, job vacancies for professional and technical personnel, clerical and kindred workers, and sales workers would be disproportionately large compared with their weight in the labor force, at least to the extent that vacancy statistics reflect trend changes. Under this assumption, one would also expect vacancies for women employees generally to exceed their share in the labor force, but not in manufacturing industries.[12]

D. RECENT TRENDS IN LABOR MARKET CONDITIONS

A necessary background consideration for the interpretation and assessment of our survey results is knowledge of the pressures on the Rochester labor market in 1965 and the few years before. For this there are considerable data of reasonably good quality, some of which are summarized in the following tabulation. The data relate to Monroe County.

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[12] See Chapter 4, section A on the extent to which these expectations were fulfilled.

Per Cent Change from Preceding Year

	Nonagricultural Employment	Index of Help-wanted Advertising	Civilian Labor Force	Number Unemployed
1961	+1.1%	—12.7%	+1.3%	+ 7.2%
1962	+3.2	+16.7	+2.3	—20.2
1963	+1.7	+ 1.8	+1.6	0
1964	+3.7	+23.7	+3.0	—20.5
1965	+3.3	+26.2	+3.0	— 9.1

Sources: Various issues of the New York State Department of Labor, *Employment Review*, and special estimates prepared by its Research and Statistics Office, Division of Employment for Cols. 1, 3 & 4; NICB for Col. 2.

The relative changes in the first two columns may be read as changes in the demand for labor, the first measuring satisfied demand and the second unsatisfied demand.[13] The third column represents changes in the supply of labor in a given year while the last column measures the unsatisfied portion of the labor supply.

The picture revealed by these figures seems clear. In the past five years Rochester employers have steadily increased their demand for labor, and in the past two years, 1964 and 1965, the increases have been highest. This is true of the satisfied demand (employment) as well as the unsatisfied demand (help-wanted advertising index). Parallel with the expansion of demand was the expansion of the civilian labor force. It is also clear that some part of the added demand was satisfied by giving employment to the unemployed. At any rate, since 1961 there has been a sharp reduction in the number unemployed and an even sharper decline in the unemployment rate.

If the trend of mounting pressure on the labor supply stands out in bold relief, the consistency of the year-to-year changes among measurable elements of demand and supply also appears clearly, though perhaps in low relief. For example, relatively large annual increases in total demand in 1962, 1964, and 1965 were matched by (1) relatively large increases in unsatisfied demand, (2) comparatively large additions to the labor supply, and (3) comparatively large reductions in the ranks of the unemployed. Conversely, when there was a slackening in the rate of expansion in employment, as in 1961 and 1963, there was a substantial slackening or actual reduction in the volume of unsatisfied demand, matched again by a tapering off in the rate of expansion of the labor force and in the rate of reduction in the number unemployed.

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[13] As we shall explain in the next section, the index of help-wanted advertising as a measure of unsatisfied demand has special limitations in the Rochester area since many of the larger employers by agreement do not place help-wanted advertisements in the Rochester newspapers.

This gradual tightening of the labor market is confirmed by related measures. For example, a rise in average hours worked per week in the later stages of a business expansion probably means that an ever larger number of employers has resorted to the use of overtime hours of work to circumvent labor shortage. The workweek has been lengthening since 1961, at a creeping pace between 1962 and 1964 but at a quickening pace between 1964 and 1965 (Table 2.11).

Changes in average hourly earnings are used as a proxy for changes in wage rates although changes reflect other factors as well. Average hourly earnings since 1960 have also advanced steadily by as much as eight to eleven cents each year, which represent annual gains of 3% to 4%. A part of these gains reflects the premium rates for additional overtime. On the other hand, the employees may have used their improved bargaining position to obtain more generous fringe benefits. There are no statistics on this aspect of the terms of employment. This sustained rise in average hourly earnings is not surprising for a labor market that has been designated by the Bureau of Employment Security as one of low unemployment[14] (unemployment of 1.5% to 2.9% of labor force) for 54 of the 72 months between January, 1960, and December, 1965. The rise in average hourly earnings in the neighboring areas of Buffalo and Syracuse was not quite as pronounced. This is probably traceable to the higher levels of unemployment, although the relative reduction in unemployment between 1960 and 1965 was much the same in all three areas (Table 2.12).

The bearing of all this on the job vacancy survey is easy to discern. The existence of a tight labor market should result in a relatively high vacancy rate and in a higher response rate from employers.

E. IMPACT OF INSTITUTIONAL FACTORS ON SURVEY

It is well established that the forces in the market are shaped by institutional arrangements. In Rochester a significant role is played by the Industrial Management Council (IMC), an employer-supported organization. In 1965 the IMC had a membership of 95 firms with employment of 110,000—41% of all employment in Monroe County covered by our survey.

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[14] This designation is based on unemployment rates that are not seasonally adjusted. With this adjustment the rate would probably not have exceeded 2.9% in any month.

What is relevant to our survey is how the IMC participates in the functioning of the labor market. Under its auspices a weekly meeting of personnel officers is held for the exchange of information on prospective layoffs and hiring needs. Through these weekly meetings and the operation of a two-person placement office, the IMC assists in the transfer of employees from firms where they are deemed surplus to firms where they are wanted. This arrangement serves to reduce frictional unemployment (hence the employer cost of unemployment insurance under a merit system arrangement), as well as the number of job vacancies. Its operations and very existence make it difficult for the associated members to violate the pledge not to pirate one another's labor—and this in turn tends to reduce the number of job vacancies.

Because of the high respect in which members hold the IMC, they look to the IMC for advice on whether to participate in surveys. The IMC has had a keen interest in THE CONFERENCE BOARD survey from its inception and not only advised participation when asked by its members but also assisted the survey staff at every turn. This, too, made for a high response rate.

This brief and highly selective review of the economy of the Rochester area indicates the presence of certain features that bear on the survey results. A larger share of the population looks to manufacturing for its livelihood in this area than in most major metropolitan areas of moderate size. Its manufacturing sector, moreover, has a higher concentration than other areas in the production of durable goods and is more dependent than most upon the presence of a supply of skilled workers.

Rochester's manufacturers, moreover, have been expanding their employment since 1958. This has not been true of the New England and Upper Middle Atlantic regions generally. Its prosperity sustained over many years has created labor shortages despite the migration of several thousands, mostly nonwhites, and the normal expansion of the labor force. Monroe County has been classed as a low-unemployment labor area by the Bureau of Employment Security in four and a half of the past six years.

The tight labor market, an awakened social concern on the part of community leaders, and interested and constructive leadership by employer organizations created a favorable climate for THE CONFERENCE BOARD's survey of job vacancies.

Table 2.1: Foreign-born, Migrants, and Schooling, Standard Metropolitan Statistical Areas in New York State, April 1, 1960

Standard Metropolitan Statistical Areas	Per Cent Foreign-born	Per Cent Migrant[a] (Persons 5 Years Old and Over)	Per Cent in School (14 to 17 Years Old)	Persons 25 Years Old and Over: Median School Years Completed	Persons 25 Years Old and Over: Per Cent Completed 4 Years of High School
Rochester[b]	10.0	9.6	91.3	11.2	43.5
Albany-Schenectady-Troy	6.7	13.3	90.0	11.0	43.4
Binghamton	6.2	11.3	90.9	10.9	42.1
Buffalo	8.8	7.9	90.7	10.5	37.9
New York City[c]	17.4	14.4	87.6	10.7	41.2
Syracuse	6.4	14.3	90.5	11.4	45.3
Utica-Rome	7.6	11.7	86.7	10.3	38.0

[a] Persons who lived in different counties in the U. S. in 1955 and 1960. [b] Unless otherwise indicated, consists of Monroe County. [c] Restricted to counties in New York State.

Source: *1960 Census of Population,* Vol. I, Part 34, New York, Table 32.

Table 2.2: Nonwhite Population, by Sex, Standard Metropolitan Statistical Areas in New York State, April 1, 1960

Standard Metropolitan Statistical Areas	Nonwhite Population: Male	Nonwhite Population: Female	Nonwhite Population: Total	Total Population	Nonwhites as Per Cent of Total
Rochester	12,289	12,778	25,067	586,387	4.3
Albany-Schenectady-Troy	8,351	9,028	17,379	657,503	2.6
Binghamton	763	724	1,487	212,661	0.7
Buffalo	43,868	45,369	89,237	1,306,957	6.8
New York City[a]	595,699	692,179	1,287,878	10,694,633	12.0
Syracuse	7,374	7,358	14,732	563,781	2.6
Utica-Rome	2,673	2,559	5,232	330,771	1.6

[a] Restricted to counties in New York State.

Source: *1960 Census of Population,* Vol. I, Part 34, New York, Table 20.

Table 2.3: Labor Force Participation, Unemployment, and Family Income, Standard Metropolitan Statistical Areas in New York State

Standard Metropolitan Statistical Areas	Per Cent of Population Aged 14 & Over in Labor Force, April 1, 1960: Males, Total	Males, Nonwhite	Females, Total	Females, Nonwhite	Per Cent of Male Labor Force Unemployed April 1, 1960	Median Family Income 1959
Rochester	78.5	79.4	39.0	49.5	3.9	$7,147
Albany-Schenectady-Troy	76.8	75.1	35.6	49.5	5.9	6,095
Binghamton	78.9	62.5	38.2	36.1	3.8	6,409
Buffalo	79.4	75.3	33.3	34.4	6.3	6,455
New York City[a]	79.1	78.3	37.9	50.8	4.4	6,548
Syracuse	78.4	79.7	36.2	41.3	5.3	6,405
Utica-Rome	75.2	69.3	35.8	30.9	6.8	6,022

[a] Restricted to counties in New York State.

Source: Cols. 1 through 4: *1960 Census of Population,* Vol. I, Part 34, New York, Tables 73, 115, and 77. Col. 5: *Ibid.,* Tables 115 and 73. Col. 6: *Ibid.,* Table 76.

Table 2.4: Nonagricultural Employment, by Industry, Standard Metropolitan Statistical Areas in New York State, 1964

Industry Group	Rochester (Monroe County)	Albany-Schenectady-Troy	Binghamton	Buffalo	New York City	Syracuse	Utica-Rome	Unweighted Averages for All Specified SMSA's except N.Y.C.
	Per Cent Distribution							
Total nonagricultural employees	100	100	100	100	100	100	100	100
Manufacturing	45.7	25.8	45.7	38.6	24.7	33.3	36.0	37.5
Durable goods	(34.8)	(12.7)	(29.7)	(25.9)	(7.8)	(22.7)	(24.4)	(25.0)
Nondurable goods	(10.9)	(13.1)	(16.0)	(12.7)	(16.9)	(10.7)	(11.8)	(12.5)
Contract construction	4.4	3.9	3.6	4.1	4.1	4.7	2.6	3.9
Transportation & public utilities	4.2	5.8	5.0	7.1	8.2	6.6	5.3	5.7
Wholesale and retail trade	17.7	19.7	16.4	19.6	21.3	21.0	16.2	18.4
Finance, insurance, and real estate	3.5	4.1	2.9	3.8	9.8	5.1	4.1	3.9
Services & miscellaneous	13.9	16.1	10.5	13.0	18.5	14.8	11.2	13.3
Government	10.4	24.5	15.9	13.8	13.4	14.5	24.5	15.8[a]

[a] Excludes Albany-Schenectady-Troy area.

Sources: New York State Department of Labor, Division of Employment, *Employment Review*, February and March, 1965, Vol. 18, Nos. 2 and 3, Albany, 1965.

Table 2.5: Expanding and Declining Industries in Rochester SMSA, Change in Employment, 1950-1960

Rochester Area Industries with		
Expanding Employment		
Average or Higher Rate	Below-average Rate	Declining Employment
Machinery except electrical (27%) Electrical machinery, equipment & supplies (42%) Motor vehicles & equipment (60%) Food & kindred products (22%) Printing, publishing & allied products (49%) Trucking service & warehousing (14%) Communications (41%) Finance, insurance, and real estate (38%) Services, including households (36%) Business services (55%) Private households (17%) Medical and other health services (38%) Educational services: Government (104%) Private (91%) Other professional & related services (43%)	Construction (8%) Manufacturing (10%) Textile mill products (4%) Other durable goods (10%) Chemical & allied products (2%) Other retail trade (6%) Hotels & lodging places (less than 0.5%) Public administration (13%)	Agriculture (—30%) Forestry & fisheries (—11%) Mining (—13%) Furniture, lumber & wood products (—19%) Primary metals (—29%) Fabricated & not specified metals (—1%) Transportation equipment except motor vehicle (—56%) Apparel & other fabricated textile products (—24%) Other nondurable goods (—38%) Transportation (—20%) Railroad & railway express service (—42%) Other transportation (—18%) Utilities & sanitary services (—13%) Wholesale trade (—2%) Retail trade (—1%) Food & dairy products stores (—13%) Eating & drinking places (—9%) Repair services (—15%) Other personal services (—4%) Entertainment and recreation services (—4%)

Legend: Underscoring indicates a major industry classification for which two-digit classifications are also shown. Numbers in parentheses are the per cent change in employment between 1950 and 1960.

Sources: *1960 Census of Population*, Vol. I, Part 34, New York, Tables 75 and 125.
1950 Census of Population, Vol. II, Characteristics of the Population, Part 32, New York, 1952, Table 35.

Table 2.6: Manufacturing Employment in New York State Standard Metropolitan Statistical Areas, 1958 and 1963

	All Employers		Per Cent Change 1958-1963	
	1958	1963	Employment	Value Added
New York State	1,915,512	1,849,991	— 3.4	22.8
Rochester (Monroe County)	104,215	109,346	+ 4.9	51.7
Albany-Schenectady-Troy	72,359	62,016	—14.3	6.8
Binghamton	46,618	41,697	—10.6	9.3
Buffalo	173,874	162,375	— 6.6	20.5
New York City	1,182,501	1,146,676	— 3.0	21.4
Syracuse	69,514	65,719	— 5.5	14.3
Utica-Rome	40,562	37,934	— 6.5	29.4

Source: U. S., Census Bureau, *1963 Census of Manufactures*, Area Series, New York, MC 63 (P)—S33, 1966, Table 2.

Table 2.7: Manufacturing Employment, by Industry, Rochester Standard Metropolitan Statistical Area,[a] 1958 and 1963

Industry Group	ALL EMPLOYEES		
	Number of Persons		Per Cent Change
	1963	1958	
ALL MANUFACTURING	121,359	116,717	4.0
DURABLE GOODS			
Lumber & wood products	448	414	8.2
Furniture & fixtures	1,106	1,259	—12.2
Household furniture	284	630	—54.9
Stone, clay & glass products	1,371	976	40.5
Concrete & plastic products	524	454	15.4
Fabricated metal products	4,555	5,029	— 9.4
Cutlery, hand tools & hardware	948	1,162	—18.4
Structural metal products	1,515	2,172	—30.2
Screw machine products	749	430	74.2
Machinery, except electrical	10,272	8,892	15.5
Metalworking machinery	4,549	3,803	19.6
Special industry machinery	1,526	1,414	7.9
General industrial machinery	888	921	— 3.6
Miscellaneous machinery	252	377	—33.2
Electrical machinery	15,997	14,869	7.6
Electronic components	1,066	924	15.4
Instruments & related products	41,591	39,560	5.1
NONDURABLE GOODS			
Food & kindred products	12,618	12,945	— 2.5
Meat products	1,238	1,183	4.6
Dairies	1,351	1,439	— 6.1
Canned & frozen foods	6,921	6,598	4.9
Bakery products	699	780	—10.4
Beverages	1,337	1,619	—17.4
Miscellaneous foods & kindred products	497	533	— 6.8
Apparel & related products	8,123	8,234	— 1.3
Men's & boys' suits, coats	6,374	6,967	— 8.5
Paper & allied products	2,477	3,312	—25.2
Paperboard containers & boxes	1,039	D	
Printing & publishing	5,263	5,294	— 0.6
Commercial printing	2,246	2,517	—10.8
Chemicals & allied products	1,762	1,204	46.3
Rubber & plastic products n.e.c.	2,153	D	
Leather & leather products	438	D	
Miscellaneous manufacturing, including ordnance	2,712	3,412	—20.5
ADMINISTRATIVE & AUXILIARY (Durable and Nondurable)	5,118	3,405	50.3

[a] When the Census release appeared in 1965 this SMSA included not only Monroe County but also the counties of Livingston, Orleans, and Wayne. However, these data may be used to reflect the relative changes in Monroe County since 89% of the SMSA's manufacturing employment was located in Monroe County in 1963.

Legend: Underscoring indicates a 2-digit classification for which a 3-digit classification is also shown. D—signifies a disclosure; i.e. the figures, if published, would reveal the operations of a particular establishment.

Source: *1963 Census of Manufactures, Area series, New York, MC63 (P)-S33, Table 4.*

Table 2.8: Employment, by Occupation, Standard Metropolitan Statistical Areas in New York State, April 1, 1960

Major Occupation Group	Rochester	Albany-Schenectady-Troy	Binghamton	Buffalo	New York City	Syracuse	Utica-Rome
	Per Cent Distribution						
White-collar workers	46	48	43	42	49	46	42
Professional, technical & kindred workers	14	14	14	12	12	14	13
Managers, officials & proprietors, excluding farm	7	8	7	7	10	8	7
Clerical & kindred workers	17	19	15	15	20	16	15
Sales workers	8	7	7	8	7	8	7
Manual & service workers	48	44	51	52	43	46	49
Manual workers	40	34	41	42	31	36	38
Craftsmen, foremen & kindred workers	16	13	12	17	11	14	14
Operative & kindred workers	21	17	26	20	17	18	21
Laborers, excluding farm & mine	3	4	3	5	3	4	3
Service workers	8	9	10	10	12	10	10
Private household workers	1	1	1	1	2	2	1
Service workers, excluding private household	7	8	9	9	10	8	9
Farm workers	1	2	2	1	a	3	5
Farmers & farm managers	1	1	1	1	a	2	3
Farm laborers & foremen	a	1	1	a	a	1	2
Occupation not reported	5	6	4	5	7	5	5
Total:							
Per cent	100	100	100	100	100	100	100
Number	231,201	247,245	83,635	476,436	4,372,640	210,171	118,205

Note: Underscoring denotes a subtotal.

[a] Less than one half of one per cent.

Source: *1960 Census of Population*, Vol. I, Part 34, New York, Table 74.

Table 2.9: Employment Changes of 400 or More, by Occupation, Rochester SMSA, 1950—1960

Occupation Group	Number of Persons		Change as Per Cent of 1960 Employment
	Increase	Decrease	
Professional, technical & kindred workers	10,993		33.0
College presidents, professors, & instructors, n.e.c.	499		58.5
Designers & draftsmen	447		29.3
Engineers	2,528		42.5
Electrical	526		46.7
Industrial	787		61.1
Nurses, professional	510		20.3
Teachers	2,332		42.4
Farmers & farm managers		976	— 63.7
Farmers (owners & tenants)		948	— 62.9
Managers, officials & proprietors, exc. farm		908	— 5.6
Managers, officials, etc. salaried	2,145		24.0
Manufacturing	952		28.3
Managers, officials & proprietors, n.e.c., self-employed		3,400	— 74.1
Retail trade		2,114	— 92.4
Food & dairy products stores		842	—159.8
Clerical & kindred workers	7,802		20.2
Bookkeepers & cashiers	858		20.4
Office machine operators	707		54.3
Stenographers, typists & secretaries	2,565		25.7
Sales workers	2,695		15.2
Newsboys	1,103		75.1
Salesmen & sales clerks, n.e.c.	1,343		9.6
Craftsmen, foremen & kindred workers	350		1.0
Foremen, n.e.c.	812		14.6
Manufacturing	518		12.1
Line & servicemen, telegraph & telephone repair	405		40.3
Machinists		459	— 14.8
Mechanics & repairmen	1,095		12.8
Mechanics & repairmen, n.e.c.	1,011		15.8
Tailors		523	— 45.9

(Continued on next page)

Table 2.9: (Continued)

Occupation Group	Number of Persons: Increase	Number of Persons: Decrease	Change as Per Cent of 1960 Employment
Operatives & kindred workers		2,518	— 5.3
Deliverymen & routesmen	416		37.7
Private household workers	668		22.1
Private household workers, n.e.c.	840		32.4
Living out & baby-sitters	1,015		44.2
Service workers, excluding private household	2,584		15.0
Attendants, hospitals & other institutions	520		37.3
Counter & fountain workers	557		60.5
Farm laborers & foremen		477	— 48.4
Farm laborers, wage workers		466	— 53.7
Laborers, except farm & mine		577	— 9.0
Laborers, n.e.c.		936	— 15.0
Communications, utilities & sanitary service		462	—111.9

Legend: Underscoring indicates totals that include the entries in the subcategories.
Sources: *1960 Census of Population*, Vol. I, Part 34, New York, Table 121.
1950 Census of Population, Vol. II, Part 32, New York, Table 73.

Table 2.10: Employment in Manufacturing, by Occupation, Rochester SMSA, 1950 and 1960

Occupation Group	Men 1950	Men 1960	Women 1950	Women 1960
All groups: Number	62,562	70,380	27,472	28,517
Per cent	100	100	100	100
Professional, technical & kindred workers	10.5	15.6	2.7	2.9
Managers, officials & proprietors	5.3	5.5	0.9	0.7
Clerical & kindred workers	7.7	7.7	30.2	33.7
Sales workers	3.2	5.0	0.5	0.9
Craftsmen, foremen & kindred workers	30.7	28.2	7.0	6.3
Operatives & kindred workers	37.1	31.9	56.2	51.6
Service workers	2.1	1.7	1.3	1.4
Laborers	3.0	2.2	0.7	0.4
Occupation not reported	0.4	2.0	0.4	2.0

Sources: *1950 Census of Population*, Vol. II, Part 32, New York, Table 84.
1960 Census of Population, Vol. I, Part 34, New York, Table 125.

Table 2.11: Hours and Earnings in Manufacturing, Rochester SMSA, 1960-1965

Year	Average Hours Worked per Week	Average Hourly Earnings
1960	40.6	$2.48
1961	40.3	2.56
1962	41.2	2.66
1963	41.2	2.76
1964	41.4	2.85
1965	42.1	2.96

Source: Various issues of the *Employment Review*.

Table 2.12: Hours, Earnings, and Unemployment, Rochester, Buffalo, and Syracuse SMSA's, 1960-1965

	Rochester Area (Monroe Co.)	Buffalo Area	Syracuse Area
	Index Numbers, 1960=100		
Average hourly earnings			
1961	103.2	102.6	102.9
1962	107.3	105.6	107.1
1963	111.3	108.6	110.9
1964	114.9	111.9	113.0
1965	119.4	115.6	117.2
Average hours worked per week			
1961	99.3	99.8	100.2
1962	101.5	101.2	100.7
1963	101.5	102.2	101.2
1964	102.0	103.7	101.2
1965	103.7	105.0	102.0
Unemployment rate[a]			
1961	112.5	130.0	112.7
1962	90.6	104.2	85.5
1963	90.6	94.2	85.5
1964	71.9	74.3	78.2
1965	62.5	60.0	61.8

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[a] The levels of the unemployment rates are significantly different:

	1960	1965
Rochester	3.2	2.0
Buffalo	7.0	4.2
Syracuse	5.5	3.4

Source: Various issues of the *Employment Review*.

3.

Survey Design: Procedures and Rationale

IT IS COMMONPLACE, but nonetheless true, that the design of a survey—questions asked, selection of respondents, method of canvass, etc.—all influence the results. We therefore describe the survey plans before presenting the survey results in the next chapter.

A. PRELIMINARY WORK AND INTERVIEWS

Our first task was to learn about hiring practices, record keeping, and the feasibility of collecting job vacancy data from employers. Following this we needed to choose a definition of a job vacancy to use in large-scale survey work. After a review of the scanty literature available on job vacancies, and after discussions with persons who have special knowledge of the labor market and hiring practices, we decided to conduct a series of preliminary interviews. We started with a list of Conference Board members in the Rochester area and requested their cooperation in our study. In addition, we asked business leaders in Rochester to recommend a number of firms that might be willing to cooperate in our study, in industries not covered by Conference Board membership. We sought to obtain a reasonable cross-section of industry groups and size of firm. In all, 28 employers were contacted.

A questionnaire was prepared containing 23 broad questions dealing with hiring practices and channels, record keeping, labor market conditions, and the like. We were able to obtain completed interviews with 27 firms. In addition, we asked each firm to give us their vacancies by job title and a number of characteristics of the vacancy as of a date convenient to them. The date was usually within one or two weeks of the interview. The interviews were conducted during September and October, 1964.[1]

B. APPROACH TO DATA COLLECTION

Alternative procedures were considered in conducting our exploratory study in Rochester. The first was to set up a reporting system and to operate it for a number of surveys, maintaining continuity of information collected, definition, etc. The emphasis here would be on eliminating the difficulties encountered in any new reporting system. The second was to vary the questions asked in each survey, in order to obtain a greater variety of information.

We chose the first alternative for a number of reasons. One was to obtain cooperation. We decided that quality was a major consideration and that a high response rate and a high degree of willingness of employers to cooperate in our study would provide data of high quality. Therefore, we stressed that the data we collected would be made available to the community, and especially to the respondents, and would be of benefit to them in their recruiting and other labor problems. By setting up a data collection system with regular reports containing some simple analysis, we hoped to provide a useful service to employers and to reciprocate for their cooperation in our survey.

A second reason for choosing a continuing survey is the educational problem in obtaining accurate reports on a new type of information. We found that our respondents were still undergoing a learning process in regard to job vacancies during the third survey. An important aspect of any job vacancy data is to have consistency among employers in the type of information provided. We found that three letters, two brief survey reports, and three personal visits were necessary to clear up some of the fringe areas of the job vacancy concept.

A third reason for the choice of procedure was our interest in stability of job vacancy reports. In some early discussions of the problem, it was suggested that job vacancies are an elusive factor in the labor market. It was feared that the number of vacancies would vary erratically from survey to survey and thus not be very reliable as indicators of labor demand. By asking the same question of a panel of firms on three occasions, we obtained data that enabled us to examine this problem in detail.

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[1] The results of the interviews were summarized in the paper entitled "Conceptual and Measurement Problems in Job Vacancies: A Progress Report on the NICB Study," *op. cit.*

In the attempt to obtain data of high quality, we conducted an advance publicity campaign and attempted to visit and interview each employer personally during each survey. We were able to obtain the endorsements, for our surveys, of the Industrial Management Council of Rochester and the Rochester Chamber of Commerce, which were very helpful. Many employers in the area look to these organizations for advice on whether or not to participate in surveys. We also addressed meetings of the Chamber of Commerce and conferred regularly with officials of both organizations. The *Times-Union*, a Rochester newspaper, published articles about our study which helped us to obtain cooperation.

The difficulties we anticipated in explaining the rather difficult concept of a job vacancy led us to decide to collect all data by personal interview. We sent letters to all employers in the sample before each survey, asking for assistance and outlining the data to be collected. Then, in all but a very few cases, an interviewer visited the employer and transcribed the desired information on the spot.

C. THE DEFINITION CHOSEN FOR THE NICB SURVEY

We sought to construct a definition of a job vacancy that would serve two functions: (1) to provide useful information for the purposes of labor market analysis, planning manpower programs, and placement activities; and (2) to make job vacancy information relatively easy to collect. We wanted a definition that would be readily understandable by employers, would not require extensive or expensive data collection procedures either on their part or on ours, and would, in short, make it possible to collect accurate information at reasonable cost.

The definition we chose and used in the three principal NICB surveys, in February, May, and August, 1965, was the outcome of both *a priori* and empirical considerations. First of all, we studied the definitions that had been used in the few job vacancy surveys previously conducted in the United States, and also the definitions used in the collection of job vacancy statistics in several European countries. Secondly, we examined the problem of constructing a definition that would parallel the definition of unemployment used by the U. S.

Bureau of Labor Statistics.[2] The third step was the series of interviews of 27 employers in the Rochester area, conducted during September and October, 1964. In these interviews we used a very broad definition of job vacancies, classifying openings by several criteria, in order to determine the relative importance of various categories, and thus be able to arrive at a working definition that would be useful in our main surveys.

The definition finally selected was included in the letter sent to firms to be interviewed in the August survey. It was formulated as follows: "For the purposes of this survey, job vacancies are unfilled job openings, present and anticipated, for which you are *actively* recruiting employees from outside your organization, as of *August 13*. They include full-time, part-time, permanent, and temporary job openings."

Further explanation, or elaboration of the definition, is contained in the following statement, taken from instructions for the August survey. "Basically we ask you to list all openings for which you were trying to hire workers on August 13. Hiring can be for workers that start immediately or at some future (specified) time. The criterion is whether or not you wished to come to an agreement with prospective workers on August 13. If so, the openings should be included in this report; otherwise not. Please exclude the following: jobs for which you have already hired workers to begin at a later date; that is, an agreement has been reached to hire a person but he has not yet reported for work."

The definition can be clarified by examining certain key words. "Actively recruiting employees" indicates that some effort or action on the part of the employer was necessary. "From outside your organization" is of course designed to exclude positions that will normally be filled by transfers within the organization. The definition includes jobs that will last for only a short period as well as permanent jobs, and covers those that will employ workers for only a few hours a week as well as those that will provide employment on a full-time basis. The words "present and anticipated" indicate that workers who will begin to work only at a future date are to be reported. The word "unfilled" was designed to eliminate those positions for which workers had already been hired; this qualifying adjective is really redundant since the same meaning should be conveyed by the words "actively recruiting." However, we experienced some difficulty on this point despite the repetition of the idea in two places in the definition. It is important to note that we did not exclude job openings which were actually occupied on the survey reference date, in the sense that a worker was performing the functions for which a new employee was sought.

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[2] An unpublished memorandum prepared by Irvin Wingeard of the Bureau of Labor Statistics was very helpful in this stage of the work.

D. QUESTIONS ASKED IN THE SURVEYS

Each employer was asked, as of the reference date, the number of his employees, the number of vacancies for each job title for which he was seeking workers, his preference as to the sex of the prospective worker, the minimum acceptable education level, the minimum period of related experience acceptable, and the earliest starting date on which a new employee could begin work. The reporting form covering this material is shown in Appendix B, together with instructions for completion of the form.

We decided to adjust the questions asked, the reporting form, and the concept of labor demand to the Rochester labor market. We did not, we feel, produce a result that is widely different from one that would be appropriate in other labor market areas. While we do not suggest that our survey could be applied directly on a nationwide basis, we feel that the necessary changes would be slight.

It is of course impossible to obtain all the desirable information in a single survey. Reporting is quite difficult for many employers, and we did not wish to burden them unduly, or to risk a large number of refusals. Therefore we attempted to choose those pieces of information that seemed relevant to the Rochester market and to exclude those that seemed unimportant. For example, we did not collect information on laid-off workers, nor did we classify vacancies by how long the job would last (temporary or permanent positions). Both layoffs and temporary jobs appeared to be unimportant in Rochester, based on our preliminary interviews.

E. SELECTION OF THE SAMPLE FOR THE FEBRUARY, MAY, AND AUGUST SURVEYS

The NICB surveys cover employers in all industry divisions except agriculture and private households. The most complete list of employers to which we could readily gain access was that of the New York State Division of Employment, covering those subject to the unemployment insurance law. The Division of Employment kindly agreed to select a sample, designed by us, from a list of these employers.

From their records we obtained a sample of some 350 employers, stratified by industry division and size of firm. In order to make our coverage as complete as possible, we prepared a list of employers from industry branches not covered by the Division of Employment records, including government, fraternal, religious, and nonprofit organizations, as well as independent professionals and other very small employers. A supplementary sample of about 50 employers was drawn from this second list, making a total sample of more than 400 employers.

Every employer with 250 or more employees was included in the sample. These employers accounted for more than 60% of total employment (excluding agriculture and private households) in Monroe County.

The sample was supplemented, after the February survey, from a special list of new companies which we also obtained from the Division of Employment. About 15 employers were added to the sample for the May and August surveys. A detailed description of the sample selection is included in Appendix C of this report.

F. PRETEST, QUALITY CHECK, AND MAJOR SURVEYS

In January, 1965, we visited about 40 small and medium-sized employers, each with fewer than 250 employees. Six employees of THE CONFERENCE BOARD and eight employees of Bernardine Slade Market Research, Inc. conducted the pretest. (The same persons carried out the three full-scale surveys.) The instructions and reporting forms were those designed for the February survey. The pretest was prepared to achieve two goals: to test the instructions, reporting forms, and interviewing techniques; and to train the interviewers.

Immediately after the pretest, we conducted a quality check with 14 of the 40 employers. The quality check involved careful questioning to determine the accuracy of the vacancy and employment information previously obtained. Some variation in the characteristics of job vacancies was found, but in no case was the number of persons sought changed. That is, in a few cases the education or schooling requirement was stated somewhat differently during the quality check, which may have been the result of slight variation in the method of questioning. However, there was no uncertainty on the part of the employers about the existence of a job vacancy.

No major defect in the survey design was revealed by the quality check. Also, no significant difficulties were uncovered in our survey procedures, instructions, reporting forms, or interviewing techniques during the pretest. Therefore, we made no major adjustments preceding the first full survey in February. The employers in the pretest were a separate sample, and therefore were not included in the regular surveys.

The February survey was conducted in the second two weeks of the month. In this, as in the two following surveys, more than 99% of all employers contacted cooperated fully. The only important difficulty appeared in the sample coverage. The principal list from which our sample was drawn, those firms liable to New York State Unemployment Insurance, was somewhat out-of-date, covering employers who reported as of June 30, 1964. In the intervening seven and one half months, many small employers had gone out of business. We suspected that a corresponding group of small businesses had been established during that period. We therefore decided to supplement the sample, as described above in section E, for the two following surveys.

In analyzing the February data we discovered a large number of vacancies with future starting dates. The majority of these were in education, representing demand for teachers for the beginning of the new school year in September, 1965. In addition, however, a number of vacancies with future starting dates was found in construction, public utilities, and other industry divisions.

The May survey was completed in about 10 days. The reporting procedure worked smoothly, as before, and many respondents had prepared data in advance; we believe this practice resulted in more accurate data than would have been obtained by relying on recall during the interview. One feature was added to the May survey. For every vacancy with a future starting date, we asked the reason that the person would begin work only at a later date, rather than immediately. The number of vacancies with future starting dates, however, was much smaller in the May survey than in the February survey. The principal cause for this is the seasonality of hiring in certain industries; this is discussed in Chapter 4.

The August survey was completed in less time than either of the two preceding surveys, despite the inclusion of a rather difficult question about the length of time that vacancies had been in existence.

We asked respondents to tell us, for each vacancy reported in August, whether or not the vacancy had been open continuously since May. If the answer was yes, we then asked if that same vacancy had been open continuously since February. The interviewer had the February and May schedules for firms that had reported vacancies in May, or in February, and sought to match the May and February reports with the response to the question about duration. This matching procedure resulted in some corrections of the May and February survey forms and interviewers also gained some further insight into recruiting practices. This topic is also discussed in Chapter 4.

The data were coded and grouped according to the *Standard Industrial Classification Manual* and the *Dictionary of Occupational Titles.* The titles used in this and our other publications are taken from those classification schemes.

G. PUBLICATIONS AND PLANS FOR FUTURE WORK

Four brief reports on the results of our study have already been published. The first of these is the paper entitled "Conceptual and Measurement Problems in Job Vacancies: A Progress Report on the NICB Study," mentioned earlier in this chapter. This paper covered principally the results of the preliminary interviews in September and October, 1964. The three major surveys of job vacancies were each reported in an article in *The Conference Board Record.* The first survey, as of February 12, 1965, was discussed in "Can You Measure Job Vacancies?" in the May, 1965 *Record.* The second survey, as of May 14, was summarized in "More on Measuring Job Vacancies," in the September, 1965, *Record.* The third survey, as of August 13, was described in "Measuring Job Vacancies: The Third Survey," in the November, 1965, *Record.* Each of these articles contained a number of statistical tables and some preliminary analysis of the data. Advance copies of the article were sent to all employers who participated in the surveys.

A discussion of some of the problems encountered in collecting data on job vacancies was presented as part of a panel on "Job Vacancy Measures and Other New Developments in Labor Market Data," published by the American Statistical Association in their *1965 Proceedings* of the Business and Economic Statistics Section. Our conclusions on survey feasibility and prospective uses of job vacancy statistics were presented in testimony before the Subcommittee on Economic Statistics of the Joint Economic Committee, U. S. Congress, and published in *Job Vacancy Statistics, Hearings*, pp. 120-167. Finally, a summary of the entire study appeared in the September, 1966, *Record*, entitled "The NICB Job Vacancy Study."

The present report represents the completion of the first phase of THE CONFERENCE BOARD's study, concerned with the feasibility of collecting job vacancy statistics. The data presented in the text tables and in the basic data tables in Appendix D have been extensively revised from those published in earlier reports. A large number of corrections of the survey data were made. However, the corrections have not been such as to affect the conclusions that one would draw from the data. We are now turning our attention to more detailed analyses of certain aspects of job vacancy statistics. This new work will be designed to determine what can be learned from job vacancy statistics and how they can be incorporated into the body of information on the labor market. We are concentrating on four areas of research: (1) certain statistical properties of job vacancy statistics, particularly the variability over time in the reports of individual employers; (2) factors related to the occurrence of job vacancy statistics in the firm, particularly labor turnover, growth of the firm, and wage levels; (3) the hiring decision, and in particular the cost of hiring a worker, based on the experience of certain employers in the Rochester area; (4) to what extent the stock of unemployed in the Rochester area have the qualifications required by the employers reporting job vacancies. Here we shall be comparing distributions of job vacancies by job requirements with distributions of unemployed by their qualifications.

4.

Summary of Survey Results

THE PURPOSE of the NICB study was to test the feasibility of collecting job vacancy information. We present a few results of our survey to illustrate the type of data that can be collected. Appendix D contains more than 80 tables classifying the survey data. In this chapter, however, an exhaustive analysis of the data is not attempted. Rather, we mention a few highlights and discuss some special problems in more detail. Since our surveys were confined to one labor market (and, as described in Chapter 2, a rather special labor market), the specific figures or ratios are unlikely to be applicable to the country as a whole, or even to the upper New York State region.

A. PRINCIPAL FINDINGS

The principal dimensions of the three surveys taken in Monroe County are shown in Table 4.1. About 400 employers were interviewed on each occasion, and the estimated number of job vacancies was about 8,000. The vacancy rate, defined as the number of vacan-

Table 4.1: Summary Results of NICB Surveys

	February 12	May 14	August 13
All employers[a] (number interviewed)	399	410	405
Total vacancies (V)	7,947	8,776	8,568
Total employment (E)	255,206	268,892	278,583
Vacancy rate (V as per cent of E + V)	3.02%	3.16%	2.98%
Employers in all three surveys (number interviewed)	393	393	393
Total vacancies	7,947	8,452	8,168
Total employment	253,964	265,393	276,594
Vacancy rate	3.13%	3.18%	2.95%

[a] Excludes agriculture and private households.

cies as a per cent of the total demand for labor (number of vacancies plus number of employed), was about 3% on each occasion. By comparison, the unemployment rate in Monroe County, as estimated by the Division of Employment of the New York State Department of Labor, was 2.7%, 1.7%, and 1.8% for the same dates.[1]

Our definition of job vacancies includes openings for which employers were recruiting, on the survey date, for workers to begin on later dates. If such vacancies are excluded from the total, "immediate" vacancy rates of 2.0%, 2.7%, and 2.6% are obtained for the three dates. These figures are more comparable with the unemployment rates for some purposes, since unemployed job-seekers are defined, approximately, as those immediately available for work. Neither the vacancy nor the unemployment rates are adjusted for seasonal variation.

Sampling Reliability

A measure of the reliability of the sample estimates is provided by the standard errors shown in the basic data tables in Appendix D.[2] The standard error indicates, with a given probability, the approximate range within which the unknown true value will be. For example, the standard errors for the total number of vacancies are in the neighborhood of 500 for each of the three surveys (Appendix Table D.1). This means, technically, that about 68% of all estimates of total vacancies that could be made from samples of 400 firms drawn like the NICB sample would fall within 500 of the true value. About 95% of all sample values would be within 1,000, or two standard errors, of the true value; more than 99% would be within 1,500, or three standard errors. Thus we can judge the reliability or accuracy of a sample estimate by comparing it with its standard error. When the standard error is small relative to the sample estimate (as with the estimate for total vacancies), the estimate may be taken as reasonably reliable. When the standard error is large relative to the sample estimate (see "construction" for February and August in Table D.2), not much confidence in the numerical value of the estimate is warranted. We have used a rule of thumb that if a total number of estimated job vacancies for a given classification exceeds three standard errors, it is statistically reliable, otherwise not.[3]

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[1] *Rochester Labor Market Letter*, March, June, and September, 1965. The Division of Employment estimates include agricultural and private household workers. The coverage is thus not completely comparable with the NICB data, but the differences are small. There are other elements of noncomparability as well; see Chapter 6.

[2] A detailed discussion of sampling reliability may be found in Chapter 8.

Employment Size

About 30% of total estimated vacancies are in small firms, those with employment under 50 (Table 4.2). Similarly, about 30% of vacancies are found in large firms—those with 2,500 or more employees. There is relatively little difference between the vacancy rates of employers classified by number of workers. This means that if one considers a job selected at random from a small firm, the job has approximately the same probability of being vacant (3%) as one taken from a medium-sized or large firm. There are, of course, factors influencing the proportion of jobs that are vacant from firm to firm. Total employment size, however, does not seem to be a very important determinant of the relative number.

Table 4.2: Employment Size: Job Vacancies, Employment, and Vacancy Rate

Employment Size on Survey Date	February 12	May 14	August 13
	Total Vacancies (V)		
Under 50	2,268	2,742	2,622
50 to 249	1,299	1,535	1,560
250 to 2,499	1,864	2,063	1,840
2,500 and over	2,516	2,436	2,546
Total	7,947	8,776	8,568
	Total Employment (E)		
Under 50	63,738	67,851	69,850
50 to 249	37,426	47,592	47,535
250 to 2,499	72,405	70,726	71,647
2,500 and over	81,637	82,723	89,551
Total	255,206	268,892	278,583
	Vacancy Rate (V as per cent of E + V)		
Under 50	3.4	3.9	3.6
50 to 249	3.4	3.1	3.2
250 to 2,499	2.5	2.8	2.5
2,500 and over	3.0	2.9	2.8
Total	3.0	3.2	3.0

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[3] This procedure has been criticized as (a) too restrictive (two standard errors would be sufficient) and (b) insufficiently restrictive (we are only saying that the total is not zero). The standard errors shown in Appendix D make it possible for the reader to perform what tests he deems appropriate. The error resulting from probability sampling is not the only source of inaccuracy, of course. Other sources are faulty reporting, inaccurate transcription of information, incomplete coverage, etc. These problems are discussed in Chapter 7.

Industry

One third or more of total vacancies in each of the three surveys were in durable manufacturing (Table 4.3); the proportion rose from survey to survey. Education was very important in February, accounting for 17% of all vacancies, but fell off sharply in importance as teachers were hired for the coming school year and vacancies were thus filled. Trade and construction were important in all three surveys. The most important component of the durable manufacturing group in the Rochester area is the photographic, optical, and instruments industry. This industry accounted for one fifth of all vacancies in each of the surveys (Table D.2). The vacancy rate was very high for construction in all three surveys, but particularly high in February. The vacancy rate for durables was above average in May and August.

Occupation

The professional, semiprofessional, and managerial workers group accounted for one third of the vacancies in February, one fourth in May, and slightly over one fifth in August (Table 4.4). The high proportion in February was, to a large extent, the result of vacancies for teachers for the coming school year. Skilled workers and semiskilled workers were very important in all three surveys, accounting for 34% to 38% of total vacancies. Another important group is clerical and sales workers.

Table 4.3: Industry: Job Vacancies and Vacancy Rate

Industry Group	February	May	August
	Per Cent Distribution of Vacancies		
Durable manufacturing	32.6	38.9	41.0
Construction	10.7	9.5	9.5
Trade, retail and wholesale	12.6	14.8	15.0
Education	16.6	8.2	4.5
All other	27.5	28.5	29.9
Total	100.0	100.0	100.0
	Vacancy Rate (V as per cent of E + V)		
Durable manufacturing	2.62	3.37	3.35
Construction	6.94	4.94	4.72
Trade, retail and wholesale	2.31	2.85	2.73
Education	6.09	3.46	1.82
All other	2.57	2.76	2.73
Total	3.02	3.16	2.98

Table 4.4: Occupation: Total Vacancies and Vacancies with Immediate Starting Dates

Occupation Group	Per Cent Distribution February	May	August
	Total Vacancies		
Professional, semiprofessional, and managerial workers	33.4	24.0	21.9
Clerical and sales workers	14.6	20.8	20.2
Service workers	7.6	9.4	8.1
Skilled workers	18.6	19.7	24.1
Semiskilled workers	19.4	14.4	14.2
Unskilled workers	6.4	11.8	11.5
Total	100.0	100.0	100.0
	Immediate Vacancies		
Professional, semiprofessional, and managerial workers	24.2	18.0	21.4
Clerical and sales workers	18.7	21.8	21.3
Service workers	10.4	9.1	7.7
Skilled workers	20.7	22.0	24.0
Semiskilled workers	17.8	16.6	15.5
Unskilled workers	8.2	12.5	10.1
Total	100.0	100.0	100.0

The vacancies for schoolteachers were principally for future starting dates. When all vacancies with future starting dates are eliminated, as shown in the lower panel of Table 4.4, skilled workers are relatively more important in the first two surveys and professional, semiprofessional, and managerial workers less important.

It is not possible to compute vacancy rates for occupation groups, although these would be of considerable interest. We did not collect occupation data for employed workers in our survey. Exploratory discussions indicated it would be extremely difficult to obtain such data. We doubt that it is practicable to collect occupational employment data from employers as part of a regular job vacancy survey. A more likely source of information on the occupational distribution of employed workers is household data. Such data are available regularly from the Current Population Survey on a nationwide basis and from the decennial censuses for small areas.

Job Requirements

For more than 50% of all openings in the surveys (Table 4.5), employers stated that the vacancies were open only to male workers.

Table 4.5: Job Requirements: Job Vacancies, by Sex of Worker, Schooling, and Experience

	Per Cent Distribution of Vacancies		
	February	May	August
Vacancies Open to:			
Males	53.6	55.9	56.4
Females	16.1	22.2	21.9
Either sex	30.3	21.8	21.7
Total	100.0	100.0	100.0
Years of Schooling Required			
Fewer than 8	13.5	13.6	11.8
8	11.2	13.9	18.9
9 to 11	13.6	8.8	14.6
12	28.4	40.0	33.1
13 to 15	7.8	7.6	7.3
16	21.5	13.5	12.5
17 or more	3.9	2.7	1.8
Total	100.0	100.0	100.0
Related Experience Required			
None	55.7	54.9	46.9
1 to 11 months	6.0	4.8	4.7
1 or 2 years	18.7	22.6	20.8
3 years or more	19.6	17.8	27.6
Total	100.0	100.0	100.0

From 22% to 30% were available to workers of either sex, and 16% to 22% to females. Thus 77% to 84% of the vacancies could be filled by male applicants, while only 43% to 46% could be filled by females. Part of the reason for the high proportion of vacancies open primarily to males (higher than the 65% of the employed persons that were males in the 1960 Census) is the occupation structure of the vacancies (see Table D.9). Vacancies for males are more concentrated in those occupations which require a longer period of time to hire a worker.

A large proportion of all job vacancies, from 36% to 45%, were available to persons who had not completed high school (Table 4.5). The percentage of all openings requiring a college degree—16 or more years of schooling—was 25% in February, 16% in May, and 14% in August. The first two of these figures for college graduates, especially the February figure, are influenced by recruiting for schoolteachers for the coming school year. Many opportunities were available for employment of persons without extensive formal education, judging from these figures. However, as Table D.15 in the Appendix shows, many of these jobs either required related job experience or were for unskilled or service occupations.

More than one half of all the job openings in February and May required no related work experience, but the proportion fell to 47% in August. Extensive experience (three years or more) was required for 18% to 28% of total vacancies. The February and May figures are influenced by recruiting for new June graduates, including schoolteachers. By August this demand was much reduced, probably owing to successful hiring. Recruiting for new graduates, June and August, and for schoolteachers are two of the important seasonal components of job vacancies; there are, however, several others.

B. FUTURE STARTING DATE

Vacancies with future starting dates should be carefully distinguished from what might be called "anticipated vacancies." Our distinction turns on whether an employer is willing to come to an agreement with a prospective worker, or is not ready to make a commitment. We define a vacancy with a future starting date as one for which an employer is willing to hire a worker as of the survey reference date, even though the worker will not normally begin to work until a later time. Further, as discussed elsewhere in this report, employers may be willing to change the starting date to suit the convenience of an employee. A job with a future starting date may be changed to one to begin immediately, or a job which could be occupied immediately may have the starting date postponed. Changes in the starting date are common in some industries and occupations.

Education accounted for more than 40% of the vacancies with future starting dates in the February survey, and nearly that large a proportion in May (Table 4.6). Most of these vacancies were for teachers for the new school year beginning in September. There were some vacancies for teachers starting in other months (Table D.7 in the Appendix) and vacancies for other occupations reported by employers in education. Teachers are by far the most important, however. This appears in the distribution of vacancies with future starting dates classified by industry, occupation, and years of schooling, as shown in Table 4.6. The number of vacancies for teachers was much reduced by May, and smaller yet by August, as more and more teachers signed contracts for the coming year.

Vacancies with future starting dates were also important in two

Table 4.6: Vacancies with Future Starting Dates: Industry, Occupation, and Schooling

	Per Cent Distribution of Vacancies with Future Starting Dates		
	February	May	August
Industry Group			
Durable manufacturing	11.0	17.6	14.3
Nondurable manufacturing	0.8	8.2	17.8
Construction	18.6	7.0	21.3
Public utilities and transportation	11.3	0.8	0.9
Trade, retail and wholesale	4.6	8.3	11.9
Finance, insurance, and real estate	3.1	1.2	4.0
Services, other than education	5.3	14.4	11.5
Education, public and private	42.3	39.1	16.1
Government	2.9	3.3	2.0
Total	100.0	100.0	100.0
Occupation Group			
Professional, semiprofessional, and managerial workers	50.4	54.2	25.3
Clerical and sales workers	6.9	16.0	13.7
Service workers	2.5	10.6	10.2
Skilled workers	14.9	8.3	24.7
Semiskilled workers	22.2	2.8	5.6
Unskilled workers	3.1	8.2	20.5
Total	100.0	100.0	100.0
Years of Schooling Required			
0	0.2	2.6	0.7
1 to 7	7.8	3.3	17.7
8	9.8	0.7	33.6
9 to 11	16.9	6.4	8.3
12	16.7	39.1	14.7
13 to 15	4.6	7.7	9.5
16	35.8	30.6	12.5
17 to 19	2.8	5.3	1.4
20	5.4	4.3	1.7
Total	100.0	100.0	100.0
Total number of vacancies with future starting dates	2,798	1,434	1,172

other major industry groups—construction, and public utilities and transportation. Both the numbers and the relative importance of vacancies with future starting dates decreased sharply between February and May in these industries.[4] Vacancies in the construction industry were as numerous in May as in February, however. Apparently, the vacancies with future starting dates in February were replaced by vacancies for immediate starting by May. As noted in the next section, the principal reason for vacancies with future starting dates in the construction industry in February was probably seasonal. February is a period of low construction activity in Rochester, as in most of the nation, but activity picks up in the spring. The vacancies in the public utilities and transportation group with future starting dates reported in February were apparently filled between February and May; the number of future vacancies decreased sharply between the two surveys, while the total number of vacancies in the industry group (both immediate and future) fell about the same amount.

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[4] The standard errors for total number of vacancies in both these industry groups are large (Table D.7 in the Appendix). The figures are not, therefore, statistically reliable.

Recruiting for future starting dates was important in manufacturing in all three surveys, and accounted for about one third of future vacancies in August. There was little variation in the absolute number of such vacancies in manufacturing.

During the May survey we asked employers to tell us the reasons for future starting dates, for each vacancy reported. In Table 4.7 we have grouped the reasons into five categories. The first two categories are periodic and recurring, "start of work year" and "seasonal." Sixty per cent of all vacancies with future starting dates have arisen for these reasons. The number of vacancies with future starting dates was very high in February, nearly 2,800, or 38% of all vacancies, but this declined rapidly to 1,400 (16%) in May, and then to 1,200 (14%) in August. As indicated above, this is principally the result of recruiting for teachers. Most of these are included under "start of work year," in Table 4.7., where 92% of all vacancies with future starting dates in the education industry are found. Seasonal variation is also found to be important in nondurable manufacturing, trade, and other services. If we had asked this question during the February survey, we feel sure that a high proportion of the vacancies for construction and for public utilities and transportation, would have been due to seasonal influences.

Technical reasons include delays in waiting for a new plant to be completed, new machinery to be installed, a new store to be opened, and the like. This is rather difficult to distinguish from future expansion, for which a more long-range view may be the distinguishing factor. Supply problems also account for some vacancies with future starting dates. These are mostly concerned with jobs for which employers prefer new graduates, and are therefore waiting for a new supply of labor to appear. Most such vacancies were in durable manufacturing and trade. Turning to Table 4.8, we see that seasonal

Table 4.7: Job Vacancies, by Reason for Future Starting Date and Industry Group, May 14, 1965

Industry Group	Reason for Future Starting Date: Seasonal	Start of Work Year	Technical	Future Expansion	Supply	Total
	Estimated Number of Vacancies					
Durable manufacturing	62	23	32	96	39	252
Nondurable manufacturing	73	0	43	0	2	118
Construction	0	0	0	100	0	100
Public utilities and transportation	0	3	9	0	0	12
Trade, retail and wholesale	70	0	12	0	37	119
Finance, insurance, and real estate	0	0	2	12	3	17
Services, other than education	105	5	88	3	6	207
Education, public and private	0	517	38	6	0	561
Government	0	0	0	48	0	48
Total, Monroe County	310	548	224	265	87	1,434
	Per Cent Distribution of Vacancies for Each Industry Group					
Durable manufacturing	24.6	9.1	12.7	38.1	15.5	100.0
Nondurable manufacturing	61.9	0	36.4	0	1.7	100.0
Construction	0	0	0	100.0	0	100.0
Public utilities and transportation						[a]
Trade, retail and wholesale	58.8	0	10.0	0	31.1	100.0
Finance, insurance, and real estate						[a]
Services, other than education	50.7	2.4	42.5	1.4	2.9	100.0
Education, public and private	0	92.2	6.8	1.1	0	100.0
Government						[a]
Total	21.6	38.2	15.6	18.5	6.1	100.0
	Per Cent Distribution of Vacancies for Each Reason					
Durable manufacturing	20.0	4.2	14.3	36.2	44.8	17.6
Nondurable manufacturing	23.5	0	19.2	0	2.3	8.2
Construction	0	0	0	37.7	0	7.0
Public utilities and transportation	0	0.5	4.0	0	0	0.8
Trade, retail and wholesale	22.6	0	5.4	0	42.5	8.3
Finance, insurance, and real estate	0	0	0.9	4.5	3.4	1.2
Services, other than education	33.9	0.9	39.3	1.1	6.9	14.4
Education, public and private	0	94.3	17.0	2.3	0	39.1
Government	0	0	0	18.1	0	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a] Distribution statistically unreliable owing to small number of reported vacancies.

Table 4.8: Job Vacancies, by Reason for Future Starting Date and Occupation Group, May 14, 1965

Occupation Group	Reason for Future Starting Date					
	Seasonal	Start of Work Year	Technical	Future Expansion	Supply	Total
	Estimated Number of Vacancies					
Professional, semiprofessional, and managerial workers	88	470	110	69	41	778
Clerical and sales workers	68	29	41	64	26	228
Service workers	82	32	20	15	6	155
Skilled workers	9	17	2	100	0	128
Semiskilled workers	2	0	7	17	14	40
Unskilled workers	61	0	44	0	0	105
Total, Monroe County	310	548	224	265	87	1,434
	Per Cent Distribution of Vacancies for Each Occupation Group					
Professional, semiprofessional, and managerial workers	11.3	60.4	14.1	8.9	5.3	100.0
Clerical and sales workers	29.8	12.7	18.0	28.1	11.4	100.0
Service workers	52.9	20.6	12.9	9.7	3.9	100.0
Skilled workers	7.0	13.3	1.6	78.1	0	100.0
Semiskilled workers						[a]
Unskilled workers	58.1	0	41.9	0	0	100.0
Total	21.6	38.2	15.6	18.4	6.1	100.0
	Per Cent Distribution of Vacancies for Each Reason					
Professional, semiprofessional, and managerial workers	28.4	85.8	49.1	26.0	47.1	54.2
Clerical and sales workers	21.9	5.3	18.3	24.1	29.9	15.9
Service workers	26.5	5.8	8.9	5.7	6.9	10.8
Skilled workers	2.9	3.1	0.9	37.7	0	8.9
Semiskilled workers	0.6	0	3.1	6.4	16.1	2.8
Unskilled workers	19.6	0	19.6	0	0	7.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a] Distribution statistically unreliable owing to small number of reported vacancies.

factors were important for all occupation groups other than skilled and semiskilled workers. Start of work year, as might be expected, is most important for the professional group; technical reasons are also important.

C. DURATION OF VACANCY

By duration of vacancy we mean the period of time that vacancies had remained unfilled as of the survey date. It should be carefully distinguished from permanency of unfilled jobs. Duration shows how long the jobs have been open; permanency indicates how long they are expected to last.

The average duration of job vacancies is useful because it indicates the state of the labor market. It is most useful, of course, when studied in connection with duration of unemployment, but we have no corresponding figures for Rochester. Some information can be gained from duration figures for vacancies alone, however, and we hope that our experience will be helpful in interpreting such a question in national surveys. If average duration is high, this indicates that employers are having more difficulty in finding workers or that the market is not functioning smoothly. A low average duration indicates the opposite.

A second use of duration figures is to study the meaning of the concept of "full employment." It has been suggested that average durations of vacancies and unemployment will furnish better and more sensitive guides to the state of the labor market than the total numbers of vacancies and unemployed.[5] Average duration should also be useful in indicating in which occupations, industries, and other groupings it is most difficult to fill vacancies.

In our preliminary interviews for September and October, 1964, we asked employers to indicate the number of weeks that their vacancies had been in existence. Many employers said that it was very difficult for them to provide this information, and we do not feel that the data were of great reliability. However, we were able to obtain the distribution of vacancies, by duration, shown in Table 4.9. The average duration indicated by this distribution, 11 weeks, may be

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[5] See Myron L. Joseph, "Current Surveys on Measuring Job Vacancies," *1965 Proceedings of the Business and Economic Statistics Section*, American Statistical Association, Washington, D. C., pp. 306-316.

Table 4.9: Duration of Vacancy, September-October, 1964

Duration (Weeks)	Number of Vacancies	Per Cent Distribution
Less than 1	122	8.7
1	67	4.8
2	57	4.1
3	67	4.8
4	462	32.8
5	33	2.3
6-12	309	22.0
13	36	2.6
14-25	125	8.9
26	29	2.1
27-38	51	3.6
39	3	0.2
40-51	9	0.6
52	15	1.1
More than 52	22	1.6
Subtotal	1,407	100.0
Duration not reported	29	
Total	1,436	

Source: "Conceptual and Measurement Problems in Job Vacancies: A Progress Report on the NICB Study," p. 419.

compared with the average duration of unemployment in the entire nation in the fourth quarter of 1964—thirteen weeks.[6]

The difficulties we encountered in obtaining duration of vacancy, and our doubts about the validity of the data, led us to abandon this question in our regular surveys. In August we asked, for each vacancy reported as of August 13, whether or not the vacancy had been in existence since May. If the answer was "yes," we then asked if it had been in existence since February. In addition, we attempted to match the vacancies reported to have been open since May or February against the respondents' schedules. As shown in Table 4.10, we found that 27% of all vacancies that we were able to classify by duration had been open for at least three months—that is, at least since May. Twelve per cent had been open at least six months, or at least since February.

Employers have trouble in supplying information on duration for

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[6] U. S. Bureau of Labor Statistics, *Employment and Earnings*, December, 1964, and January, 1965, Table A-8.

Table 4.10: Duration of Vacancy, by Industry Group and Employment Size

	Per Cent of Vacancies Open at Least:	
	3 months	6 months
Industry Group		
Durable manufacturing	35.7	20.4
Nondurable manufacturing	16.5	7.2
Construction	19.6	3.4
Public utilities and transportation	50.8	3.3
Trade, retail and wholesale	21.4	7.6
Finance, insurance, and real estate	14.0	0.6
Services, other than education	21.1	11.9
Education, public and private	28.2	15.5
Government	30.5	7.8
Total	26.9	12.3
Employment Size		
0 to 9	14.6	0
10 to 19	45.3	14.6
20 to 49	34.8	18.1
50 to 99	16.1	11.0
100 to 249	23.6	14.4
250 to 999	16.6	8.3
1,000 to 2,499	27.7	13.0
2,500 and over	31.9	15.7
Total	26.9	12.3

two general reasons: (1) difficulty of recall; and (2) imprecision in the concept. For those employers who do not have written records of job vacancies, the question about duration must be answered by memory. This is often faulty, as we determined by comparing vacancies reported to have been open since May or February with the corresponding May and February reports. Those employers who have written records on job vacancies usually refer to them in order to answer questions about duration. The records consulted were usually job requisitions, which are dated in practically all firms. Even with requisitions, however, there are conceptual problems.

We asked for vacancies for which continuous recruiting had been in progress in the intervening period, that is, since May or February. In addition, we asked for vacancies that "had not been filled" in the intervening period. This, we explained, meant that the employer did not feel that he had successfully hired a person. This is a somewhat ambiguous concept. It is hard to draw a line between the situation where an employer feels he has hired a person, only to find shortly thereafter that he has not, and the situation where the employer came to an agreement with a worker who reported for work and was subsequently found unsatisfactory and released. In the latter case, the employer would not feel that the vacancy had been successfully filled, since his acceptance of the applicant was only tentative. We wished to "date" such cases only from the time the employer recommenced recruiting, however. Many variations on these examples were reported to us by employers.

The criterion of continuous recruiting seemed to be most useful in practice. Even here, however, it is difficult to draw a hard and fast line. An example might be the case where an employer had a requisition dated in April but for five days during May had ceased recruiting because of a reevaluation of the project on which the worker was to have been employed. The five-day period included our reference date for the May survey. At the end of the five-day period, a decision was made to go ahead with the project and recruiting recommenced. Was the vacancy—still open in August—open since May or not? We ruled that it was not, but are not sure that this is the ideal solution.

Another problem arises with workers who are in perennially short supply such as nurses. Some hospitals reported that they had been understaffed for a year or more. They had positions in their tables of organization that they would have been happy to fill and for which they had been recruiting, in various ways, continuously during the year. Specific vacancies, or requisitions, were not identified, however. When a nurse was hired she was sent where she was most needed at the time of hire. It was therefore impossible to say just how long a given vacancy had been open. In this case, we tried to determine the minimum number sought during the period from May to August, or from February to August, and used this number as the number of vacancies open since May or February.

Public utilities and transportation and durable manufacturing had the highest proportions of vacancies open at least three months, with government and education close behind (Table 4.10). Durable manufacturing and education had the highest proportions open at least six months. Firms with either 10 to 49 employees or 1,000 or more employees had relatively high proportions of vacancies of long duration. As shown in Table D.16a in the Appendix, small manufacturing firms, 10 to 99 employees, had a particularly high proportion of vacancies of long duration.

One difficulty in interpreting the duration-of-vacancy figures comes from job vacancies with future starting dates. As discussed in the preceding section of this chapter, there are distinct seasonal patterns in some industries in hiring with future starting dates. This variation affects the duration-of-vacancy figures. Since a long recruiting period, or a long period during which bargaining and search continues, is accepted as normal in such industries, a long duration of vacancy is to be expected there. This undoubtedly explains the relatively large proportion of jobs (15.5%) remaining open at least six months in education. It would be difficult to measure this factor precisely, because a vacancy in August might be for immediate starting, while the same opening in May or February was for a future starting date. In other words, vacancies with future starting dates become vacancies with immediate starting dates, if recruiting is not successful during the intervening period.[7] For this reason, we do not present a classification of vacancies by starting date and duration.

It was mentioned above that duration of vacancy would be useful in identifying tight markets for certain skill groups. In Table 4.11 we show numbers selected from Tables D.16b, c, d, and e in the Appendix. From these summary figures we see that average duration is high for three occupation groups: professional, semiprofessional, and managerial workers; skilled workers; and semiskilled workers. The first group is influenced by the vacancies for teachers, as reflected in the figures for education. Average duration is greatest for persons with college training, again reflecting the recruiting practice in education. The relative tightness of the market for skilled workers, as well as for high-level professional workers, is shown in the fact that nearly one half of all the vacancies for workers with five or more years of experience had been open at least three months, while one fourth had been open at least six months. Openings for service workers with one or more years of college have a high average duration. This is mainly the result of one specific occupation group, practical nurses. It has become customary to require one year of specialized education beyond high school to qualify as a practical nurse, and workers in this specialty are in great demand and short supply.

Much smaller fractions of vacancies for females were open for three or six months than of vacancies for males or persons of either

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[7] It is noteworthy that this problem would exist also for surveys that exclude vacancies with future starting dates from their definitions. A choice would have to be made between measuring duration from (a) the date recruiting began and (b) the date the vacancy became one for immediate starting. Whichever is chosen, it will be difficult to obtain an accurate response.

Table 4.11: Duration of Vacancy, by Occupation, Sex, Education, and Experience

	Per Cent of Vacancies Open at Least:	
	3 months	6 months
Occupation Group		
Professional, semiprofessional, and managerial workers	42.5	23.2
Clerical and sales workers	15.6	2.1
Service workers	18.5	4.0
Skilled workers	37.3	15.5
Semiskilled workers	23.3	17.1
Unskilled workers	10.4	5.7
Total	26.9	12.3
Vacancies Open to:		
Males	28.2	12.5
Females	13.1	3.6
Either sex	40.0	22.3
Total	26.9	12.3
Years of Schooling Required		
Less than 8	29.1	13.3
8	18.8	7.1
9 to 11	19.1	13.2
12	24.4	7.6
13 or more	44.6	24.3
Total	26.9	12.3
Minimum Period of Related Experience		
None	20.9	9.1
1 to 11 months	12.7	5.7
1 or 2 years	40.1	16.4
3 or 4 years	14.6	8.1
5 years or more	47.9	25.2
Total	26.9	12.3

sex (Table 4.11). This is, in large part, the result of the difference between the occupational distributions of vacancies open primarily to males, to females, or to either sex. That is, vacancies primarily for females are more concentrated in occupations with short average durations than are vacancies for males or for either sex. A simple computation indicates that if the occupational distributions were the same for each sex, most of the differences in average duration by sex would be eliminated.

There seems to be relatively little interrelation between education and experience in regard to duration of vacancy. This classification, shown in Appendix Table D.16d, is useful for pinpointing specific occupations, but it shows no obvious general relationship.

D. CHANGES BETWEEN SURVEYS

The total number of job vacancies rose from February to May, and then declined from May to August, as shown by the summary results in Table 4.1. Total employment rose steadily throughout the six-month period. For the 393 employers interviewed in all three surveys, the totals varied in the same directions. In this section we examine briefly the changes reported by individual employers. In order to obtain comparability, we restrict comparisons to the 393 employers who participated in all the surveys. We shall examine two aspects of change. The first is how the changes in total vacancies were distributed among employers; that is, the extent of participation in the general movement and differences by size of employer. The second question is the relation between changes in vacancies and changes in employment of individual units.

Of the 393 employers under study, 141 reported they had no vacancies in each of the 3 surveys, 139 had 1 or more vacancies in each survey, and 113 had no vacancies in 1 or 2 surveys but 1 or more vacancies in 1 or 2 surveys (Table 4.12). In order to avoid excessive complexity, the discussion will be concentrated on the 252 employers who reported a vacancy at least one time.

From February to May, when total vacancies rose, more employers reported increases in their vacancies than decreases (Table 4.13). From May to August, when total vacancies fell, more employers reported decreases. For the six-month period, while total vacancies showed a small net gain, increases were more common than decreases

Table 4.12: Number of Employers Reporting Vacancies (Employers in All Three Surveys)

	February	May	August
Number interviewed	393	393	393
No vacancies in a given survey	200	185	201
No vacancies in all 3 surveys	141	141	141
One or more vacancies in a given survey	193	208	192
One or more vacancies in all 3 surveys	139	139	139
One or more vacancies in only 1 survey	24	17	9
One or more vacancies in 2 surveys			
(Feb. and May)	19	19	0
(Feb. and Aug.)	11	0	11
(May and Aug.)	0	33	33

Table 4.13: Changes in Number of Vacancies Reported by Individual Employers (Employers Reporting Vacancies in One or More Surveys)

Month	Number of Employers	Per Cent			
		Total	Increase	No Change	Decrease
February and May					
Total	252	100%	50%	12%	37%
1 or more vacancies in February	193	100	40	11	49
0 vacancies in February	59	100	85	15	—
May and August					
Total	252	100	36	19	45
1 or more vacancies in May	208	100	34	12	54
0 vacancies in May	44	100	45	55	—
February and August					
Total	252	100	47	13	39
1 or more vacancies in February	193	100	40	9	51
0 vacancies in February	59	100	71	29	—

among individual employers. Thus the predominant direction of changes in the vacancies reported by individual units paralleled changes in the totals.

The composition of the changes is interesting. In each of the three comparisons, employers with vacancies in both months reported more decreases than increases. Those reporting vacancies only in the second of the two surveys compared were sufficiently numerous to result in a net increase in the February-May and February-August comparisons, but not in the May-August comparison.

A division of employers by employment size reveals some differences in the experience of large and small employers (Table 4.14). There were relatively few cases of "no change" among large employers (250 or more employees); they were more likely to have vacancies in both surveys, and their larger average number of vacancies made small changes more likely.

This effect may be partly eliminated by examining the difference between the percentages with increases and decreases in vacancies reported. For employers of all sizes, increases in vacancies were most common from February to May, while decreases predominated from May to August. However, for large employers and employers of medium size (50 to 249 employees), increases were more frequent than decreases over the entire six-month period from February to August, while small employers (fewer than 50 employees) experienced more declines. Thus, in all three surveys, increases in vacancies were concentrated among larger employers. New employers just come into

Table 4.14: Changes in Number of Vacancies Reported, by Size of Employer

Month and Employment Size (in earlier month)	Number of Employers	Per Cent Total	Increase	No Change	Decrease
February and May					
Total	252	100%	50%	12%	37%
Large employers (250 or more)	110	100	59	3	38
Medium employers (50 to 249)	71	100	45	15	39
Small employers (fewer than 50)	71	100	42	24	34
May and August					
Total	252	100	36	19	45
Large employers	109	100	39	10	50
Medium employers	72	100	38	22	40
Small employers	71	100	28	31	41
February and August					
Total	252	100	47	13	39
Large employers	110	100	51	8	41
Medium employers	73	100	53	14	33
Small employers	69	100	35	22	43

existence typically have few employees and a large relative number of vacancies, as noted below in Chapter 7; these counterbalance the declines in vacancies of older small firms, such as those present in all three of our surveys.

The relationship between the number of vacancies and the number of employees reported by an employer may be interpreted in various ways. One approach is to consider the sum of the vacancies and employment of an employer as his total demand for labor. If the time required to fill a vacancy does not change between two surveys (assume for simplicity that the occupational composition of the total demand also remains unchanged) and total demand rises, both vacancies and employment should rise, in total and for the average employer; if total demand falls, under the conditions described, both should fall. An increase in the time required to fill a vacancy should increase vacancies more than employment, and conversely. The preceding relationships can also be easily restated in terms of changes in the vacancy rate.

For individual employers we should expect dispersion about the average that would depend partly on fortuitous circumstances and partly on hiring and other employment expenditures. A successful employment policy should, other things being equal, reduce the number of vacancies relative to the number of employees. For example, a rise in wages or hiring expenditures by a firm, relative to other firms similarly situated, should result in more hires, fewer quits, and thus a lower vacancy rate than the firm would have without such action.

Turning to the data, we see that the demand for labor, as defined above, rose strongly over the six-month period (Table 4.1). Employment rose 9% for 393 employers interviewed in all three surveys. The vacancy rate rose slightly from February to May, then declined from May to August. Total employment increased 4.5% from February to May, and 4.2% from May to August; in each of these intervals, the number of employers with increases in employment exceeded the number with decreases (Table 4.15). However, the number of employers reporting increases during the second period was much greater than during the first period. This indicates that employment increases were concentrated among fewer employers from February to May.

When employers are classified by directions of change in employment and vacancies, no systematic relation is evident. That is, the two classifications appear to be independent, as may be seen by comparing the percentage distribution for increase in vacancies with the

Table 4.15: Changes in Vacancies and Employment

Change in Employment between:	No Vacancies All 3 Surveys	Change in Vacancies			
		Total	Increase	No Change	Decrease
February and May					
Per cent: Increase	36	42	46	50	46
No change	38	11	10	17	11
Decrease	26	46	44	33	43
Total	100	100	100	100	100
Number of employers	141	252	129	30	93
May and August					
Per cent: Increase	37	61	62	37	70
No change	37	12	12	12	11
Decrease	26	28	26	51	19
Total	100	100	100	100	100
Number of employers	141	252	90	49	113
February and August					
Per cent: Increase	38	60	63	46	63
No change	38	9	8	14	9
Decrease	25	31	30	40	28
Total	100	100	100	100	100
Number of employers	141	252	118	35	99

corresponding distribution for decrease in vacancies, for each of the three time comparisons in Table 4.15. An investigation of the factors affecting the job vacancy rates of individual employers, and the changes in these rates, is high on the list of our plans for further research.

E. CONSISTENCY OF ROCHESTER AND DEPARTMENT OF LABOR SURVEY RESULTS

Before any generalizations on the feasibility of job vacancy surveys based on the Rochester surveys can be formed, it is necessary to determine whether the Rochester results can be considered typical, or whether the economic structure and conditions in Rochester are so unique as to constitute it a case *sui generis*. This is the principal purpose of the following series of comparisons of the Rochester survey results with those obtained by the U. S. Department of Labor in its job vacancy surveys in 15 labor areas.[8] The greater the degree of consistency, the greater is our assurance in generalizing from the Rochester experience.

As we noted in Chapter 1, the Department of Labor (DOL), through its affiliated state agencies, engaged in job vacancy surveys in 16 labor areas during the period roughly concurrent with that of THE CONFERENCE BOARD's surveys in the Rochester area. Because each organization conceived its surveys as exploratory and experimental, it was decided the broader objectives would best be served by not using identical schedules and procedures. At the same time, care was taken to have some common features that would permit meaningful comparisons of the more substantive results of both sets of surveys.

The DOL surveyed each area twice, once in the last quarter of 1964 and again in April, 1965. The NICB surveys of Rochester were taken in mid-February, May, and August, 1965. The second round of survey results for both agencies may be considered subject to much the same seasonal influences. For this reason most of the comparisons are restricted to the results of the second round of surveys.

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[8] The Department of Labor initiated surveys in 16 areas. However, the data for New Orleans were omitted from its summary because of special difficulty in the survey design. All data from the Department of Labor surveys, with noted exceptions, are taken from "Prepared Statement of Vladimir D. Chavrid, Director, Office of Manpower Analysis and Utilization, U. S. Employment Service," printed in *Job Vacancy Statistics, Hearings*, pp. 59-97.

Both sets of surveys used a similar but not identical definition of a job vacancy—a position that an employer was actively seeking to fill from outside his organization on the survey date. The Department of Labor restricted these openings to those with an immediate starting date, while in the NICB surveys those with future as well as immediate starting dates qualified. However, since many of the NICB tabulations were limited to those with immediate starting dates, comparisons can be readily made. In principle both sets of surveys covered nonagricultural and nonhousehold employment.

Some perspective is gained by showing the size of the Rochester area and of the 15 areas surveyed by the DOL. The universe employment of each labor area is shown in the second column of Table 4.16. Of the 15 areas in the official surveys, Milwaukee represents the median size, with nonagricultural nonhousehold employment of 415,000 in 1965. The Rochester area in mid-May had an estimated universe of 269,000 employed persons. Thus, to the extent that survey results are affected by area size, Rochester survey results would reflect those associated with areas in the quartile just below the median size.

Table 4.16: Size of Labor Area and Unemployment Rate, Rochester and 15 Areas Surveyed by the Department of Labor

Labor Areas	Size of Labor Area[a] April, 1965 (No. employed in thousands)	Unemployment Rate[b]
Rochester	269	2.9%
New York	3,337	5.3
Chicago	2,163	3.5
Los Angeles	2,203	5.9
Philadelphia	1,349	5.3
Minneapolis-St. Paul	548	3.4
Baltimore	541	4.0
Kansas City	535	5.1
Milwaukee	415	3.0
Miami	310	4.6
Portland, Ore.	250	4.6
Providence	223	5.8
Birmingham	179	3.4
Richmond	169	2.1
Charleston, W. Va.	69	6.9
Charleston, S. C.	51	3.3

[a] The figure for each area excludes employment on farms and in households.
Source: *Job Vacancy Statistics, Hearings*, Table 1, p. 67.

[b] Based on the unemployment percentages for November, 1964, January, 1965, and March, 1965 reported in the *Area Trends in Employment and Unemployment*.

As to the average unemployment rate that prevailed in these areas during the 6 months preceding May, 1965, Rochester had the next to lowest, 2.9% of its labor force. Among the Department of Labor areas, Richmond, with 2.1%, reported the lowest rate and Charleston, West Virginia—long a depressed area—the highest rate, 6.9%. Providence and Los Angeles followed with rates of 5.8% and 5.9%, respectively. The median unemployment rate for the 15 areas was 4.6%, found in Portland, Oregon, and in Miami.

Response Rate

The response rate of 99% in the Rochester survey certainly was not typical of the response in the Department of Labor surveys, although the Rochester rate was approached by the response rates in Portland (97.8%), Milwaukee (93.9%), Los Angeles (93.8%), and Birmingham (92.7%). In all except 3 of the 15 areas the response rate exceeded 80%. The median rate was 86.4%, and the lowest two rates were 64.5% and 60.2% in Chicago and Providence, respectively. These response rates relate to the second round of surveys.

Rochester and three of the four Department of Labor areas with more than a 90% response rate—Milwaukee, Portland, and Birmingham, but not Los Angeles—share at least two features. They are of moderate size, with employment ranging from 415,000 in Milwaukee to 179,000 in Birmingham. The other feature in common is an average or below-average unemployment rate.

As the Department of Labor has not described the factors that are responsible for the large variations in response rates, we can only speculate in general terms. Obvious considerations are the care with which a particular survey and survey community are prepared, technical competence of the survey staff, the attitude of respondents to the survey organization and its objectives, and the method of survey canvass. In all these matters, with the possible exception of staff competence, THE CONFERENCE BOARD had advantages. Having no operating responsibility, only a research one, the Board staff assigned to this project could exercise care in preparing each step of the survey, particularly in acquainting employers and employer organizations with the objectives of the survey and the potential usefulness of the survey results. A minor source of difference is the unwillingness of some employers, for a variety of reasons, to accept referrals from a government placement office and who, therefore, shun any dealings with it. Nonresponse for this reason did not occur in Rochester, since THE CONFERENCE BOARD does not engage in placement activity.

In all three NICB surveys the job vacancy information was collected by means of a personal visit to the respondent who had been alerted a week in advance that an interviewer would call on him. The Department of Labor surveys, with few exceptions, relied primarily on the use of the mail to collect the data. Explaining to and persuading the reluctant respondent is more likely to be successful in a visit than in a written or telephone communication. This seems the preferred procedure in the initial stages of a new survey, and undoubtedly figures importantly in the virtually perfect response rate achieved in the Rochester survey.

The complete response in the NICB survey was achieved not only in the mid-May survey but also in those taken in mid-February and mid-August. This fact lends some support to the view that a periodic job vacancy survey would receive the cooperation of the great majority of employers. And this evidence is buttressed by the experience of the Department of Labor surveys. In eight of the 15 areas the response rate in the second round exceeded that in the first. In two others the response rates were virtually unchanged. The median response rate was much the same in both rounds, 86.6% and 86.4%.

It is also worth nothing that supplementary questions, such as the wage rate attached to each job vacancy, did not discourage response.

The critical importance of the response rate is sufficient justification for further exploration of the Department of Labor experience, particularly on the subject of variation in response by size of respondent. In each area establishments were arrayed in descending order of employment. In this array Group A consisted of the largest establishments in the area (ranging from 70 firms in the smallest areas surveyed to 500 firms in the largest); Group B consisted of the remaining firms, if any, accounting for the upper 50% of employment in the area; and Group C consisted of a sample of those firms in the lower 50% of employment.[9]

When all 15 areas are combined, it appears that in each of the two survey rounds the largest establishments (A) had the highest response rates, the medium-size (B) the lowest rate, and the smallest (C) the intermediate rate. While the response rate improved between rounds 1 and 2 in each size group, the improvement was negligible among the smallest establishments.

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[9] Unpublished report of Bureau of Employment Security, *The Job Vacancy Experimental Program in Fiscal Year 1965—Findings and Conclusions,* Nov. 1965, Table 1, fn., p.8.

Table 4.17: Response Rate, 15 Areas Surveyed by the Department of Labor

Subsample Group	Per Cent of Establishments Responding	
All areas	**Round 1**	**Round 2**
A	84.7	87.8
B	72.2	77.3
C	80.3	81.3
3 areas with lowest response		
Providence		
A	71.5	71.5
B	67.3	62.8
C	57.4	54.5
Chicago		
A	64.6	81.1
B	56.1	60.6
C	60.5	58.4
New York		
A	62.5	81.1
B	68.0	74.4
C	70.0	63.5

Source: BES, *Findings*, Table 1, pp. 8-9.

In the areas with the three lowest response rates—Providence, Chicago and New York—the response was markedly below average in all three size groups, particularly in the first round. In the second round there was a marked improvement in the response record of the largest establishments in Chicago and New York, but a deterioration in the record of the smallest in all three areas.

These comparisons suggest in general that: (1) the largest establishments were the most cooperative; and (2) in areas where the total response was decidedly below average, the lack of cooperation extended throughout the sample. The former finding is especially encouraging since, as the discussion in Chapter 8 will show, the most economical sampling design calls for a heavy representation of the larger employers.

Per Cent Reporting Job Vacancies

The response rate is only one facet of response adequacy. The genuineness of the response is at least as important. For example, is there any evidence that a significant number of respondents engaged in a pro forma cooperation by returning a schedule with zero vacancies when in fact unfilled vacancies did exist? It requires little effort to complete a schedule with zero vacancies, and one gains immunity from follow-up letters and telephone calls. It is also conceivable that zero vacancies were incorrectly reported owing to a failure of some respondents to understand fully the question being asked.

This query is prompted by the apparently low percentage of respondents reporting a job vacancy in the Department of Labor surveys, compared with the percentage in the Rochester survey. In the second round of the Department of Labor surveys the percentage for all fifteen areas was 23.9%, and in the NICB May survey of Rochester, 46.8%, restricting job vacancies to those with immediate starting dates. There was little variation in this average percentage by survey round.

Why this vast difference? Two factors come immediately to mind: (1) the inter-area variation in the size composition of the sample and (2) the inter-area variation in the relative tightness in the labor market.

(1) Inter-area variation in the size composition of the sample is relevant if the probability of an employer's reporting a job vacancy varies directly with the absolute size of his work force. That is, the relative number of large, medium, and small employers in the sample and therefore among respondents, would affect the percentage reporting a vacancy.

The Department of Labor survey results support this expectation. As noted earlier, the sample design called for the sample to be divided into three groups, A, B, and C, which can be taken in a rough-and-ready way to represent large, medium, and small employers. The per cent reporting a job vacancy by the three size groups is available for 12 of the 15 areas. The average percentages were 57.4, 23.1 and 10.1, respectively, for groups A, B, and C. The comparable percentages for the Rochester area were 78.3 for group A and 33.8 for group C. There is no group B. Therefore on both empirical and *a priori* grounds it is clear that the size composition of the sample of respondents affects the percentage reporting a job vacancy.

The size classes, groups A, B, and C, are not defined with sufficient precision to serve our immediate purpose. There is a variation among areas in the absolute size of the boundaries marking off groups A, B, and C, which in turn are due to the large inter-area variations in the implicit sampling ratios and in the relative concentration of employment by employer size class. These differences are effectively eliminated by estimating the per cent of employers in each area which reported a vacancy. This is accomplished by applying the inflation factors by area and group as given in Table 6 of the BES *Findings.* A comparable calculation is also performed on the sample results of the Rochester survey.[10]

On this adjustment basis, in the 15 areas, the median per cent of employers reporting a job vacancy is 11.9, compared with 24.1 on the unadjusted basis. The comparable adjusted percentage for Rochester is 27.1 and unadjusted, 46.8 (Table 4.18). Thus the adjustment results in a relatively wider difference between the median percentages for the Department of Labor surveys and the Rochester survey.

(2) Does the inter-area variation in the tightness of the labor market explain any considerable part of the variation in the per cent of employers reporting a job vacancy? One would expect the per cent reporting a vacancy to rise as the per cent of the labor force unemployed falls. This information by area, together with the response percentage, is also presented in Table 4.18. The latter is relevant since, the lower the response rate, the greater can be the effect on the results of any bias in the respondent subsample. The 15 Department of Labor survey areas are listed in order of the unemployment percentage, starting with the lowest. The relative tightness in the supply of labor, as measured by the unemployment rate, does explain some of the inter-area differences in the percentage of employers reporting job vacancies. But much remains unexplained. The reporting percentage in Rochester of 27.1, with an unemployment percentage of 2.9, does not appear significantly out of line with the reporting percentages for Milwaukee and Richmond, also with relatively low unemployment percentages. However, in four—Charleston, S. C., Chicago, Miami, and New York—of the remaining 13 Department of Labor areas the percentage reporting a vacancy is very much smaller than one would expect from the unemployment percentage.

Clearly, other inter-area differences must be present. In Miami, the special feature probably is a sharp seasonal decline in new hirings in April, which is after the peak in winter resort business. There is not a proportionate increase in unemployment because so much of

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[10] The DOL surveys excluded and Rochester survey included those employing fewer than four persons. To achieve comparable coverage by size of firm, those employers with fewer than four persons were excluded from the expansion of the Rochester sample to the universe count.

Table 4.18: Unemployment Rate, Response Rate, and Per Cent Reporting a Job Vacancy, Rochester and 15 Areas Surveyed by the Department of Labor, April, 1965

Labor Area	Unemployment Rate	Per Cent of Sample Responding	Per Cent of Employers Reporting a Job Vacancy
Rochester[a]	2.9	99.0	27.1
Richmond	2.1	89.2	21.4
Milwaukee	3.0	93.9	25.2
Charleston, S. C.	3.3	83.6	8.1
Birmingham	3.4	92.7	14.0
Minneapolis-St. Paul	3.4	86.4	15.9
Chicago	3.5	64.5	3.5
Baltimore	4.0	85.4	16.3
Portland, Ore.	4.6	97.8	11.9
Miami	4.6	88.1	5.1
Kansas City	5.1	85.7	10.3
Philadelphia	5.3	87.1	13.3
New York	5.3	72.3	4.2
Providence	5.8	60.2	12.8
Los Angeles	5.9	93.8	10.2
Charleston, W. Va.	6.9	82.8	9.9

[a] Relates to May 14, 1965.

Sources: Col. 1: Table 4.16.
Col. 2: *Job Vacancy Statistics, Hearings,* Table 1, p. 67.
Col. 3: Standardized for area variations in the composition of firm size of samples. See text above.

the peak demands for labor are met by in-migration from outside the Miami area. With the completion of the season many return to their former locations.

In New York, part of the explanation may be attributed to a misunderstanding of the question. The New York survey office noted that most employers who use union hiring halls, such as employers in the important industries of construction and stevedoring, reported zero vacancies in the belief the vacancies should be reported by the hiring halls.[11] A possible bias in the subsample that did respond may also be part of the explanation for the unusually low percentage of employers reporting a vacancy in the New York area since the percentage of the sample employers returning a schedule was relatively low. This was also the case in the Chicago area, also characterized by an unexpectedly small percentage reporting a job vacancy.

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[11] We are indebted to Miss Miriam Ourin, in the New York City office of the New York State Department of Labor, Division of Employment, for calling this information to our attention.

No information is at hand to explain the exceptional situation in Charleston, South Carolina. A response analysis in this area carried out by the Bureau of Labor Statistics after the first survey round discovered no significant reporting errors. This fact serves to exclude pro forma replies as the reason for a comparatively small number reporting a job vacancy.

Job Vacancy Rate

If there were systematic error in reporting or in some other aspect of data collection, it should be reflected in the vacancy rate of the area, which is the number of job vacancies expressed as a per cent of the number employed plus the number of job vacancies. If the job vacancy rate does not bear a reasonable relation to other labor market developments, the analyst is justified in questioning the reliability of the reported job vacancies. For this reason it is helpful to compare the vacancy rates for Rochester and the 15 areas surveyed by the Department of Labor.

Analysis of labor market activity suggests that there should also be an inverse relation between the job vacancy rate and the unemployment rate. That is, the larger the unemployed labor supply (higher the unemployment rate), the fewer should be the number of unfilled jobs (lower the vacancy rate). One would also expect that the more similar the frictional unemployment rate among areas, the higher the degree of association of the two rates.

If no allowance is made for variations in the rate of frictional unemployment, the relationship between the unemployment[12] and job vacancy rates seems reasonable in all areas except three—Providence, New York, and Birmingham (Table 4.19). In the last, the vacancy rate seems unduly low and in the other two, excessively high. For all 15 areas the coefficient of rank correlation between the job vacancy rate and the unemployment rate was neither high nor statistically reliable, but negative, as one would expect. However, if one smoothes the data by calculating quintile averages, the inverse relationship between job vacancy rate and unemployment rate appears clear and strong (Table 4.19).

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[12] The unemployment percentage represents the average for the six months preceding May 1, 1965. More precisely, the percentages are based on the unemployment percentages for November, 1964, January, 1965, and March, 1965 reported in *Area Trends in Employment and Unemployment.*

Table 4.19: Job Vacancy and Unemployment Rates, Rochester and 15 Other Areas Surveyed by the Department of Labor, April, 1965

Labor Area	Job Vacancy Rate April, 1965	Unemployment Rate	Quintile Averages	
			Job Vacancy Rate	Unemployment Rate
Charleston, S. C.	2.67	3.3		
Providence	2.48	5.8	2.49	3.73
Richmond	2.33	2.1		
Milwaukee	2.02	3.0		
Minneapolis-St. Paul	1.45	3.4	1.62	3.90
New York	1.38	5.3		
Baltimore	1.35	4.0		
Miami	1.29	4.6	1.31	4.03
Chicago	1.28	3.5		
Portland, Ore.	1.14	4.6		
Philadelphia	1.10	5.3	1.09	4.43
Birmingham	1.03	3.4		
Los Angeles	1.01	5.9		
Charleston, W. Va.	0.95	6.9	0.83	5.97
Kansas City	0.53	5.1		
Rochester	2.66[a]	2.9		

[a] Based on vacancies with immediate starting date on May 14, 1965.

Sources: Col. 1: Based on data in *Job Vacancy Statistics, Hearings*, Table 1, p. 67 and Table 4, p. 72; Rochester figure from Tables D.1 and D.8a.
Col. 2: From Table 4.16.

The rates for the Rochester area—2.66 for job vacancies and 2.9 for unemployment—appear to be reasonable in the light of the Department of Labor survey results. Indeed the comparisons in this section are sufficient, in our judgment, to demonstrate that the survey results for the Rochester area are generally consistent in important respects with the results of the majority of the Department of Labor surveys. While the response rate, the per cent reporting a job vacancy, and the job vacancy rate for the Rochester area are either the highest or among the highest, they are not much higher than the comparable percentages for areas whose unemployment rates, like Rochester's, were relatively low, as in Charleston, S. C., Richmond, and Milwaukee. Where the Rochester percentages are higher, this is most likely attributable to the collection of data by personal visit rather than predominantly by mail and perhaps to the more careful preparation of community acceptance of the survey.

We conclude, therefore, that the broad results of the Rochester survey are not atypical, and certain generalizations from this experience would be entirely proper.

5.

Costs, Benefits, and Alternatives

THE EXPERIENCE described in previous chapters suggests that statistics on the number of job vacancies by occupation can be collected with a level of accuracy that renders the figures meaningful. What would be the money costs of such a continuing statistical program, and what benefits might be derived?

We shall not attempt to place a money value on the benefits; so, a formal cost-benefit analysis is precluded. Moreover, it needs to be stressed that the money costs are only rough estimates to provide an order of magnitude. Even so, these considerations should carry us some distance toward a decision on a national statistical program on job vacancies, especially since the discussion also evaluates two alternatives to job vacancy statistics based on existing data, help-wanted advertising and unfilled jobs on file with the U. S. Employment Service.

A. ESTIMATED COSTS FOR NATIONAL PROGRAM

The starting point is the record of costs incurred by the NICB in its three surveys in Rochester. These need to be modified in several important respects in order to simulate a continuing survey and to eliminate the special costs of an exploratory effort. It is necessary also to make assumptions on schedule content, extent of published geographic detail, frequency, and method of data collection. The estimate of cost is based on a schedule similar to the one used by NICB in the Rochester survey. For reasons developed in the next section on "Benefits," the sample design should yield reliable statistics for particular labor areas—we assume for the 146 major areas with a minimum of 50,000 employees[1]—which would be aggregated

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[1] U. S. Bureau of Employment Security, *Area Trends in Employment and Unemployment*, January, 1965. The 146 labor areas may need to be supplemented to provide information on job vacancies in small towns and rural areas outside of these labor areas. This supplementation does not enter into the cost estimates.

Table 5.1: Cost of One Round of a Continuing National Survey

1. Cost per job vacancy schedule for a single survey	$17.22
a. Preparation for the survey	
Cost of paper and printing of schedules, instructions, and covering letter	
Cost of entering identifying information on schedules and addressing envelopes	
Mailing and postage	
Clerical assistance	
Total	$ 0.96
b. Collection and tabulation	
Follow-up costs (telephoning, correspondence and personal calls)	
Photo-copying all completed forms	
Editing, checking occupational titles and coding	
Key-punching, computer listing and checking	
Computer tabulations	
Preparation of analytical and text tables from tabulations	
Total	$ 2.57
c. Supervision and preparation of published summary and press release (3 man-months at annual salary of $12,000 plus fringe benefits, space, and equipment)	$13.69
2. No. of schedules required to sample 146 major labor areas	103,060
3. Annual cost for quarterly survey in 146 labor areas [($17.22) (103,060) (4)]	$7,098,772.80
4. Annual cost of national compilation	$100,000.00
5. Estimated grand total	$7,198,772.80

to provide national statistics for all urban areas, excluding job vacancies on farms and in households. Data would be collected quarterly and by mail. The prices implicit in the estimate are those that obtained in 1965.

The estimating procedure consists simply of estimating the cost per schedule on the basis of Rochester experience and multiplying the estimate by the number of schedules required for the 146 major labor areas. The latter is based on the sample design used by the Department of Labor in its sixteen surveys. In this scheme labor areas are distributed among six size classes based on number employed. The number of employers to be sampled is specified for each size class. The product of the number of schedules (employers) and the cost per schedule equals the cost for 146 labor areas. An arbitrary amount of $100,000 is added to cover the cost of deriving and issuing national totals.

Rochester is the 38th largest labor area. One would expect the cost per schedule, particularly supervisory cost, to be smaller in the 37 larger areas, and to be somewhat more in the 108 smaller areas. Since sample size is proportionately larger in smaller areas than in larger areas, the Rochester cost experience may be taken as being approximately typical. The estimated cost of $7.2 million, admittedly crude, may err by being too large, since, when the survey becomes a routine matter, more use will be made of computer operations than was the case in the Rochester surveys.

The discussion in the next section on "Benefits" demonstrates that much of the value of the information depends on the availability of occupational detail. Such detail must be entered with precision and care if it is to be translated into the codes of the *Dictionary of Occupational Titles*. This fact, in turn, suggests that the quality of the data would be significantly improved if the data were collected by personal interview, as the NICB did in its Rochester area surveys.

It then becomes relevant to know the additional costs of data collection by personal call on the respondent. Based on the Rochester experience, this cost is estimated at $5.70 per schedule in 1965. The interviewing costs arise from a briefing session with interviewers, telephoning respondents, travel costs within the area, and interviewing time. This last item is the product of the actual man-hours per schedule required to complete all interviews and $1.85, the current hourly cost of such employment in Rochester. For the entire 146 labor areas this annual cost would amount to $2.35 million—in addition to the estimated total cost of mail surveys of $7.2 million. In other words, the estimated total annual cost for quarterly job vacancy surveys in 146 labor areas using personal interviews would be about $9.5 million. A longer experience is required to determine whether data collection by interview is necessary to achieve an acceptable level of accuracy and reliability. If necessary, the additional cost, in our judgment, is a modest one.

The estimated annual cost of $7.2 or $9.5 million takes on more meaning by comparing it with the annual cost of the Current Population Survey (CPS) which has as its primary objective a current measure of the volume of unemployment. Its cost has been reported as being over $3 million for the fiscal year 1965-66 for the unrevised sample of 35,000 households. This cost covers data collection, tabulation, and preparation of the published reports. The CPS is a monthly survey compared with the proposed quarterly survey for job vacancies. However, the CPS sample size has been such as to provide reliable estimates only for the nation. The proposed job vacancy survey would measure unfilled jobs in 146 major labor areas in addition to providing national and regional totals. Thus, while the annual cost of job vacancy surveys is somewhat more than double that of the current unemployment surveys, the yield of usable information is proportionately higher.

Obviously the decision to install this type of reporting program must weigh the benefits against the costs as well as the expected benefits from alternative uses of the funds. However, our own information is such that we are able to discuss only the expected benefits of a reporting program on job vacancies.

B. EXPECTED BENEFITS

At the outset of this report some of the potential uses of a continuing survey of job vacancies were mentioned. How much of the potential can be realized must wait upon the experience with a regular reporting program. In the meantime, however, we can go a little beyond the speculations of the research analysts on certain of the hoped-for benefits. This is accomplished by reporting the opinions of those in Rochester who received the survey results.

There are several facets, at least, to the idea of usefulness of job vacancy statistics. One facet is its usefulness for manpower programs in specific labor areas—job placement, vocational guidance, counseling and training, and—for employers—short-run manpower planning. Another facet, still at the local level, is the analytical usefulness of these statistics to further understanding of how a specific labor area functions. At the national level the usefulness of these data depends largely on what they can contribute to the formulation of economic policy for promoting economic growth with minimal short-term fluctuations. Here the contribution might well be in matters of timing and direction of changes in monetary and fiscal policies as well as in the more precise articulation of a Federal manpower program. Our own opinion survey concerned exclusively the views of particular employers and community organizations on the usefulness of job vacancy data for local manpower programs. The opinions of employers and of community organizations (mostly schools) are presented separately.

The results of each of the three surveys, as previously noted, were summarized, and copies were sent to each of the respondents and to about 60 schools and community organizations in Rochester which were not in the survey sample. Late in October, 1965, after the results of the August survey had been circulated, this group of nearly 500 was sent a questionnaire entitled "Opinion Survey on Usefulness of Job Vacancy Statistics." The substantive paragraphs of the covering letter noted:

> "By this date, you have received summary reports on three surveys of job vacancies (February, May, and August) in Monroe County. These surveys are part of an exploratory effort to determine the feasibility of a permanent reporting program. Because of its experimental character and national importance, our study has had the financial support of the Ford Foundation.
>
> "The next stage is to prepare a report on our conclusions and recommendations on the feasibility of a permanent program. In this connection it would be most helpful to have your opinions, based on your reading of the three summary reports. We would be obliged therefore if you would be good enough to fill out the brief questionnaire that is enclosed. A stamped, addressed envelope is also included for your convenience.
>
> "Needless to say, your frank views are being solicited. Please be assured we do not take offense at criticism."

Opinions of Employers in Job Vacancy Sample

The questionnaire was mailed to 405 respondents, and 183 (45%) returned usable schedules with one follow-up effort. In general, the

Table 5.2: Response to Opinion Questionnaire, by Size of Employer's Organization

Size of Employer (Number of Employees)	Number of Questionnaires: Mailed	Number of Questionnaires: Returned	Per Cent Returned	Respondents' Employment[a] as Per Cent of Total Employment
0 to 9	112	32	28.6	27.4
10 to 19	39	11	28.2	28.0
20 to 49	51	18	35.3	35.9
50 to 99	35	20	57.1	57.2
100 to 249	52	30	57.7	58.3
250 to 999	82	55	67.1	67.9
1,000 to 2,499	18	11	61.1	59.2
2,500 or more	14	6	42.9	68.4
Total	405	183	45.2	65.7

[a] Based on employment of sampled employers in mid-August, 1965.

larger the company, the more likely it was to return the questionnaire. When the usable schedules are weighted by August, 1965 employment, the replies cover two thirds of total employment of sampled employers.

The first item attempted to determine how many read the reports and with what care. It was phrased as follows:

> You have participated in our surveys in Monroe County and received our reports summarizing the results of each survey. Please indicate, by checking the appropriate boxes, whether or not you have read the reports.

	1st report on February survey	2nd report on May survey	3rd report on August survey
Have *not* read the report	☐	☐	☐
Have read the report			
Carefully	☐	☐	☐
Casually	☐	☐	☐

Since four respondents failed to answer this question there are 179 usable returns for the question. As each employer received three reports, the maximum number of reports to be read was 537. Of this number, 53, or 10%, were not read. Fifteen respondents, accounting for 45 of the 53 reports, said they read none of the three reports. About one fourth of the reports were read carefully, and nearly two thirds casually. The answers, when classified by the size of the respondent (number employed in August, 1965) are revealing. The per cent of respondents in each size class who read at least one report

Table 5.3: Interest in Survey Results, by Size of Respondent's Organization

Size of Respondent's Organization (No. of Employees)	Number of Respondents Reading			Total Number of Respondents	Per Cent Reading at Least One Report Carefully
	None	At Least One but None Carefully	At Least One Carefully		
0 to 9	8	20	3	31	10
10 to 99	5	32	11	48	23
100 to 249	2	17	10	29	34
250 to 999	0	24	30	54	56
1,000 or more	0	4	13	17	77
Total	15	97	67	179	31

carefully rises sharply as size of firm increases—from 10% for firms employing fewer than 10 persons to 77% for those employing 1,000 or more. Of the 15 who read none of the reports, 8 were firms employing fewer than 10 persons, and no firm employed as many as 250.

This fact suggests that the small employers, though they are characterized by slightly higher job vacancy rates than large employers, have little need for manpower planning because of the smallness of the absolute numbers of unfilled jobs. Having no felt need, they have little interest in, and probably still less time for, reading the results of a job vacancy survey. On the other hand, the larger employers—those with a labor force of 250 or more—are more apt to have a personnel office with a professionally trained staff with the need, interest, and time to acquire job vacancy information.

Usefulness to Employer

The employer's opinion on the usefulness of the survey data was given in response to the following set of three questions:

If job vacancy information were collected each quarter on a continuing basis and statistics on job vacancies by occupation made public within 30 days following the survey date, do you think the information would be useful:

(a) to *you* in the day-to-day operations and planning of your organization? Yes ☐ No ☐
If yes, please specify how:
(b) to community organizations concerned with manpower planning or training? Yes ☐ No ☐
If yes, please specify how:
(c) for another purpose? Yes ☐ No ☐
If yes, please specify:

There is a clear and positive association between the per cent answering "yes" and the degree of care in reading the reports. For example, all fifteen who read none of the reports consistently replied that the survey would not be useful in their own operations or that they were undecided.[2] One eighth of those who read at least one report, but none carefully, responded in the affirmative, compared with slightly more than one fourth of those who read at least one

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[2] Those returning a schedule but not answering this question are entered as n.a. and interpreted to be undecided.

Table 5.4: Usefulness to Employer, by Degree of Reader Interest

Useful to Employer	Reading of Reports					
	None		At Least One, but None Carefully		At Least One Carefully	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Yes	0	0	12	13	18	28
No	12	100	81	87	46	72

report with care.[3] Whether the reading persuaded some to answer "yes," or whether they read the reports because they had already reached this conclusion, cannot be determined from these data. Of the 169 responding to this question, 18% answered "yes," and 82%, "no." There is virtually no difference in the proportions when the "yes" and "no" answers are weighted by August, 1965, employment.

Nonetheless, there is some association between size of firm and an affirmative answer. This was implicit from the other relationships between firm size and care in reading and between care in reading and affirmative answer. No firm employing fewer than 20 persons reported a "yes"; 11% of those employing 20 to 249 replied in the affirmative; and of those with 250 or more, nearly one third reported that the job vacancy data were directly useful in company operations. However, a relatively higher proportion of that third were in the size class 250 to 999 employees.

The distribution of affirmative replies by industry largely reflects the correlation between industry and size of firm. Thus, nearly 30% of the manufacturing firms answered "yes," compared with 10% of the trade firms, 8% of the service employers, and none in construction.

Of the 30 employers answering "yes," all except two responded to the request to specify how job vacancy data would be useful in the operations of their organization. Aside from a handful of miscellaneous uses, the specific uses may be grouped under the following general headings:

(1) *Better informed about labor market when seeking employees.* Other phrasings of the same general idea: indicate supply shortages; show employment conditions; indicate expected competition for particular jobs; provide a "feel" of the labor market; show trend; estimate competition to be met in securing labor.

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[3] The undecided are excluded from the totals in computing these percentages.

(2) *Planning and recruitment.* Other phrasings of the same general idea: adjust recruitment to conditions; show need for developing alternative plans for filling vacancies; would help decide how to fill vacancies; may show need to revise job qualifications; provide a better idea of area needs; training programs; planning and timing of reductions and additions to staff.

(3) *Miscellaneous.* Indicate whether vacancies in one firm are common to others; indicate occupations where automation should be considered; union negotiations; could assist in bringing workers in shortage occupations to Rochester.

With one or two exceptions, these comments appear to reflect genuine uses and can be taken as fully responsive. Why then did not more employers, at least among the larger ones, report an affirmative answer? For some, exposure to this information may have been too brief for them to realize its possible uses in company operations. Others may be obtaining much the same information in another way. In this connection, it is relevant to recall the role of the Industrial Management Council (IMC) in the functioning of the Rochester job market.

In Chapter 2 it was suggested that the weekly meeting of personnel managers under IMC auspices might render the job vacancy survey data of little use to these member companies (see Chapter 2, pp. 26-27). For this reason the opinions of members of the IMC and nonmembers are shown separately for the manufacturing companies who make up the vast majority of IMC membership.

	Number of Employers	*Per Cent Answering*	
		Yes	*No*
Manufacturing firms with membership in IMC..........	27	37	63
Other manufacturing firms......	35	23	77

Actually a higher percentage of the IMC members returned an affirmative answer than did the nonmembers. However, the nonmembers tend to be the much smaller firms. Even so, it is quite possible that most of the 17 IMC firms answering "no" might have responded "yes" if the weekly meeting of personnel managers were not held.

Usefulness to Community Organizations

Employer opinion swings sharply in the other direction when the usefulness of job vacancy data to community organizations is the question.[4] Of the 179 respondents, 34 (19%) did not reply to this particular query; but of the remainder that did reply, 72% expressed the view that job vacancy data would be useful to community organizations for a variety of purposes.

The specific uses enumerated conform closely to the expected uses as set down in Chapter 1. Seventeen respondents, for example, specified the use of these data "to indicate areas of continuing shortages as guides to programs." Another 15 expressed much the same view by saying this information would help "to adjust training programs to community needs," including programs for "unemployables" and dropouts. Some particularly stressed the use of these data in vocational planning in schools. Others emphasized the assist given to job placement: "helping high school students"; "show the individual where he may be needed"; "unemployment boards would know there are jobs available"; "indicate jobs requiring little education and experience" and this information would "help employment agencies, public and private."

Several noted administrative uses. The number of unfilled jobs and persistence of particular shortage occupations could serve to evaluate the effectiveness of current manpower programs. The same sort of data could also be used to support the need for expanded manpower programs. And one mentioned that such information could "show the need for higher pay in 'tight' occupations."

Opinions of Schools and Community Organizations Not in Job Vacancy Sample

For the most part, the opinions just summarized are those of employers in private business and reflect their views on how schools and other community organizations could use job vacancy information reported on a regular basis. Even more pertinent, however, are the opinions of the schools and organizations themselves. The articles that summarized each of the three surveys were mailed as each was published to 62 organizations in the Rochester area deemed to have an operational interest in this information. The same roster was asked to respond to the opinion questionnaire. Exactly half returned schedules, and 25 of the 31 returns are from schools. As many as three fourths read all three reports, and all read at least one report, although two gave no answer to this particular question. Better than half reported reading at least one article with care, and nearly 55% of the 87 articles distributed were reported as being read with care. This suggests a greater interest in the material than the employers in the sample have reported.

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[4] The responses to questions (2b) and (2c) are combined, since the specified uses in both parts are similar. Apparently our distinction on the questionnaire between community organizations concerned with manpower planning or training and other purposes was not meaningful.

The relevant question for this group is the usefulness of survey data on job vacancies for community organizations concerned with manpower planning and training. Since three failed to answer this question, the number of usable replies is reduced to 28. All but one of the 28 expressed the view that this information is useful in carrying out some part of their program objectives. Aid in the placement of students, both graduates and dropouts, ranked high among the uses. Also frequently mentioned was the usefulness of these data for determining the type of technical and vocational programs currently needed, as well as providing guidelines for the long-term planning of high school curriculum, counseling and technical training.

C. WILLINGNESS OF EMPLOYERS TO PARTICIPATE IN A REGULAR REPORTING PROGRAM

Another test of employer interest is the willingness to participate in a continuing reporting program. To gauge this interest two questions were asked:

Would you be willing to participate in a permanent job vacancy survey at quarterly intervals?
Yes——— No———

Would you be willing to furnish the same basic information in response to a *mail* questionnaire? Yes——— No———

With respect to the first of these two questions, all but 14 of the 183 respondents gave their answer. Of those replying, 104 (62%) answered "yes"—that is, as of the survey date, this number was willing to participate in a continuing reporting program on job vacancies. Perhaps even more impressive, employment in these 104 organizations accounted for about 85% of all employment engaged by the 183 organizations.

Table 5.5: Employers' Willingness to Participate in Continuing Survey, by Opinions on Usefulness of Survey Results

Opinions	Number of Employers	Per Cent Willing to Participate in Continuing Survey
Useful in own operations		
Yes	30	100
No	141	49
Useful for schools and community organizations		
Yes	107	75
No	36	28
Not useful to either	35	40

How does willingness to participate in a continuing survey compare with opinions on the usefulness of regularly reported job vacancy statistics?

Of those who consider the survey results useful, a large percentage, (80%), are also interested in being a part of a continuing survey. This may be taken to mean they judge the benefits to themselves or to the community at least equal to the costs to themselves in supplying the data. As for the substantial fraction willing to participate in a continuing survey despite their reported opinion that the information is not useful, this may mean they are not sure of their own position and believe a longer experience is required.[5]

In Table 5.6 we see again the lack of interest of small employers. Perhaps more of the small organizations would be willing to participate if they were aware that their commitment would be limited in time since they would be members of a rotating subsample. In any

Table 5.6: Willingness to Participate in Continuing Survey, by Size of Respondent's Organization

Size of Organization (Number Employed)	Number Responding	Per Cent Willing to Participate
0-19	43	21
20-249	68	60
250 or more	72	76
Total	183	60

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[5] This may be one of the reasons the Rochester Industrial Management Council decided in the late spring of 1966 to carry out a quarterly survey of job vacancies among its membership.

case, there are sufficient numbers of small employers to provide a representative subsample. Of the larger organizations (those employing 250 or more who were included with certainty in the Rochester survey) about one fourth, 10 by number, reported an unwillingness to participate. If this rate proved to be typical in most labor areas, it might pose some sampling problems, but certainly would not be crippling. Indeed, as experience with job vacancy data accumulated, many of these might reverse their opinion on participation.

We also wished to ascertain whether the employers, once the survey had been introduced, would be willing to use a mail questionnaire in reporting the job vacancy information. This is of some importance, since data collection by mail costs less than collection by personal call.[6] Of the 104 employers indicating a willingness to participate in a continuing reporting program, 101 were agreeable to use of a mail reporting form. This is the evidence for assuming data collection by mail in the cost estimate presented earlier in this chapter.

To summarize, the results of the opinion survey make it clear beyond any doubt that the regular reporting of job vacancies with occupational detail for a particular labor area would be useful and valuable in the operations of schools and community organizations concerned with manpower planning, training, and placement. This is the view expressed by almost all the schools and organizations and by a large majority of private employers. However, when the issue is the usefulness of the same information to employers in the day-to-day operations and manpower planning of their own organizations, only about 20% answered in the affirmative. The affirmative view was most widespread among the medium-sized employers. It was suggested that many of the larger employers found the information superfluous because much the same information was obtained through the weekly meetings of personnel managers under the auspices of the Industrial Management Council. While this arrangement may not be unique to Rochester, neither is it widespread. The Rochester findings on this point therefore probably are not representative of how the larger employers think about this matter in most other labor areas.

Interest in a continuing survey is not necessarily related to its usefulness, at least in the early stages of a new reporting program. Thus, while only 45% of 183 employers reporting considered the survey results either useful to themselves or to schools and community organizations, as many as 60% expressed their willingness to participate in a continuing survey. Moreover, since the negative attitude was most prevalent among the small employers we conclude — believing the Rochester survey results are typical—that there is sufficient interest to support a statistically valid reporting program on job vacancies on a voluntary basis.

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[6] We note again our earlier reservation about possible deterioration in the quality of the survey results obtained by mail.

Before one passes judgment on whether the uses justify the estimated cost, it is important to remember that the uses that have been discussed—those in a local labor area and restricted there to employers, schools, and community organizations—do not cover the whole gamut of possible uses. Even at the local level mention must be made of the possibility that job vacancy data could significantly improve the effectiveness of the placement agencies, public and private.

In this connection reference should be made to the report of the Department of Labor which summarizes some of the uses of the job vacancy survey results by the affiliated State Employment Service agencies who carried out the surveys in the 16 labor areas. These reported uses are quoted *in extenso* because [illegible] because they appear in a source that is not always readily available.

"OPERATIONAL USES OF THE DATA"

"The primary emphasis of the experimental job vacancy program was for Employment Service operational use in the job market. In the first two rounds of the surveys, the most extensive use of the job vacancy information was in connection with manpower training programs. The surveys disclosed unmet needs for workers in a wide range of occupations, many of them suitable for MDTA institutional or apprentice training. Data on vacancies open for one month or more (defined as hard-to-fill vacancies) rather than on total vacancies were most useful in determining training needs.

"In Baltimore and Kansas City, the job vacancy information was used as a basis for establishing vocational training courses in the schools. The Oregon agency reported that data from the first round of job vacancy surveys were used by the State Department of Education to develop vocational education and other post-high-school courses for the Portland Community College. In Wisconsin, the job vacancy survey aided in the development of a mass training program for 3,000 disadvantaged youth to be trained over the next two years. Because of the job vacancy survey, the number of adults to be trained in Milwaukee was expanded in 12 occupations, including industrial laboratory assistant, production foundry worker, machine shop inspector, nursing assistant, cook, electric appliance repairman, and repairman for lawn and boat motors.

"The Urban League of New Orleans had been endeavoring to establish an on-the-job training program, to be financed jointly by MDTA funds and a nonprofit organization. With the use of job vacancy data, the Louisiana Employment Service was able to furnish the Urban League with a list of about 30 occupations which were suitable for on-the-job training. On the basis of information obtained from the New Orleans job vacancy survey, a second list of 50 occupations with potential for apprenticeship training was developed and made available to the Louisiana Board of Apprenticeship. As a result, several on-job training (OJT) projects were planned. Two of these were for a group of specialized occupations in the dye industry and for auto repairmen.

"At the national level, the USES used the job vacancy data to prepare guides for State agencies to follow in the development of manpower training programs.

"Local employment offices in 11 of the surveyed areas attempted to develop new job orders from the vacancy data. Placements as the result of the job development efforts were relatively small. Many vacancies were already filled before the Employment Service could attempt job order development. Job order development was limited by the fact that many of the vacancies were already on file in the ES local offices; in attributing placements to the job vacancy program, States were instructed not to count placements for an occupation until such placements began to exceed the job order for that occupation already on file in the ES from the employer. In addition, a number of vacancies were closed to ES assistance due to union hiring rules or the existence of civil service regulations and thus reduced the number of vacancies available for job development and placement activities.

"Another reason for the limited number of placements was the fact that so many of the vacancies were in jobs for which there were no available applicants. Finally, although the States were instructed to attempt job development and placement, the newness of the program, the need for initiating complex administrative and analytical procedures, and the short time permitted to get the program under way, results tabulated and reported, of necessity kept the States from devoting the time that would be given if the program were operational over a period of time.

"Vacancy data were useful, however, in helping Employment Service staff to structure their contacts with employers more effectively. Even on the basis of two surveys, agencies found that the information suggested new areas for promotional activities and led to increased employment possibilities for applicants. In New York, for instance, the Employment Service learned, as the result of the surveys, that job vacancies existed in establishments not known by the agency to have vacancies in such occupations.

"Several areas participating in job vacancy surveys used the job vacancy findings in counseling. Some of these areas were Portland, Los Angeles, and Richmond. Furthermore, the Wisconsin agency used the job vacancy data along with other job market information in a bulletin on vocational outlook in Milwaukee. National occupational outlook information would be combined with local data in the form of an occupational monograph.

"Although some of the participating agencies expressed the opinion that the job vacancy data would be useful in worker mobility, there was not sufficient time to integrate the existing vacancy program into the established interarea clearance machinery to take advantage of job imbalances between areas. It is intended in future surveys to summarize the data in a manner useful for specific mobility projects and for the whole Employment Service interarea recruitment program." [7]

At the national level one should remember the possible contribution these data can make to policy formulation in matters pertaining to manpower and to steady economic growth. Finally, there is the area of labor market analysis. These data, together with other data already available, may well help us to extend our understanding of how particular labor markets operate. The NICB has already embarked on one test of this possibility.

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[7] *Job Vacancy Statistics, Hearings*, pp. 73-74.

In our view, the documented uses and the additional expected uses justify the estimated costs. Whether or not this sum would yield more benefits if it were expended on other informational gaps on the supply of and demand for labor requires a judgment which we are ill qualified to make. We therefore leave the decision to others with longer experience and deeper understanding of this area of knowledge.

D. ALTERNATIVE MEASURES

It is also necessary to consider whether existing data can be exploited to provide much the same information. Should this prove to be the case, there would be no need, of course, to incur the costs of job vacancy surveys. Two different sets of data have been suggested as possible alternatives to a count of job vacancies. They are measures of help-wanted advertising and unfilled job orders in the files of the U. S. Employment Service. Part I of this study concludes with an examination of these two possibilities.

Help-wanted Advertising

Placing a help-wanted advertisement in a newspaper entails an outlay of money by the employer and therefore can be read as evidence of active recruiting for a worker. So, it is worth exploring how well help-wanted advertising in a given labor area measures job vacancies.

Several tests can be applied to the data now available. For example, is there a close agreement between the number of job vacancies as determined by a sample survey of employers and the number disclosed by a count of help-wanted ads? A less exacting test would compare the relative changes in the two measures from period to period. That is, is the movement in the indexes of help-wanted ads a reliable predictor of the relative movement of job vacancies—in all labor areas or in some? If the index is a reliable predictor in most labor areas, this proxy measure of job vacancies could give some of the help in formulating national policy which is expected of the job vacancy data themselves.

Over several years The Conference Board's help-wanted advertising series, compiled on a national basis, has moved inversely but in close conformity to the unemployment rate.[8] Thus it has been a good predictor of the relative movement in the volume of unemployment. Is it equally effective as a predictor of the relative movement of job vacancies?

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[8] NICB, *The Conference Board's New Index of Help-wanted Advertising*, Technical Paper Number Sixteen, New York, 1964, Chart 5, p. 17.

A still less rigorous test is whether the help-wanted ad series indicates correctly the direction of change in job vacancies from one period to another. If so, the series would be helpful in indicating direction of month-to-month changes between quarterly surveys of job vacancies.

The existing series on help-wanted ads relate to totals, without any indication of the occupational composition of the jobs to be filled. For the Rochester area, however, a series with occupational groupings has been compiled for the interval covered by the first two NICB surveys. If there should be a close similarity in the occupational composition of help-wanted ads and job vacancies, it might well be worthwhile to compile statistics on help-wanted advertising by occupational groups in other labor areas on an experimental basis.

1. *Character of the statistics on help-wanted advertising*

THE CONFERENCE BOARD series on help-wanted advertising (hereafter referred to as the NICB index) is a monthly tally of the number of help-wanted ads placed in newspapers in 52 cities of the United States, including Rochester, New York. After adjustment for the differing number of weekdays and Sundays in a month these counts of ads are expressed as index numbers with and without further seasonal adjustment. The latter are used in our analysis since the other term of the comparison, job vacancy data, is not adjusted for seasonal variation. Many of the limitations of these indexes as measures of labor demand have been discussed by Mrs. Charlotte Boschan.[9] Here we need note only that the index makes no pretense of counting the number of jobs to be filled, only the number of advertisements placed in the newspapers.

Indeed, the very nature of the information in the ads precludes a precise count. The advertisements placed by employers, and more especially those placed by private employment agencies, fail to specify the exact number of jobs to be filled when there is more than one job. Thus, on this score the count leads to an understatement whenever an advertisement refers to more than one job. On the other hand, there is a degree of overstatement whenever duplicate advertisements appear. Private employment agencies frequently follow this practice whenever there is a tight labor market. Duplication is also present when the employer and the private agency advertise the same openings. However, based on our experience in counting help-wanted ads in Rochester (which we describe later) the count, on balance, understates the number of unfilled jobs.

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[9] Charlotte Boschan, "Job Openings and Help-wanted Advertising as Measures of Cyclical Fluctuations in Unfilled Demand for Labor," in *The Measurement and Interpretation of Job Vacancies*, pp. 500-506.

In any case, the data do not provide an absolute count of the number of job vacancies, and it is not possible therefore to apply the first test.

2. *Indexes of help-wanted ads as predictors of change in job vacancies*

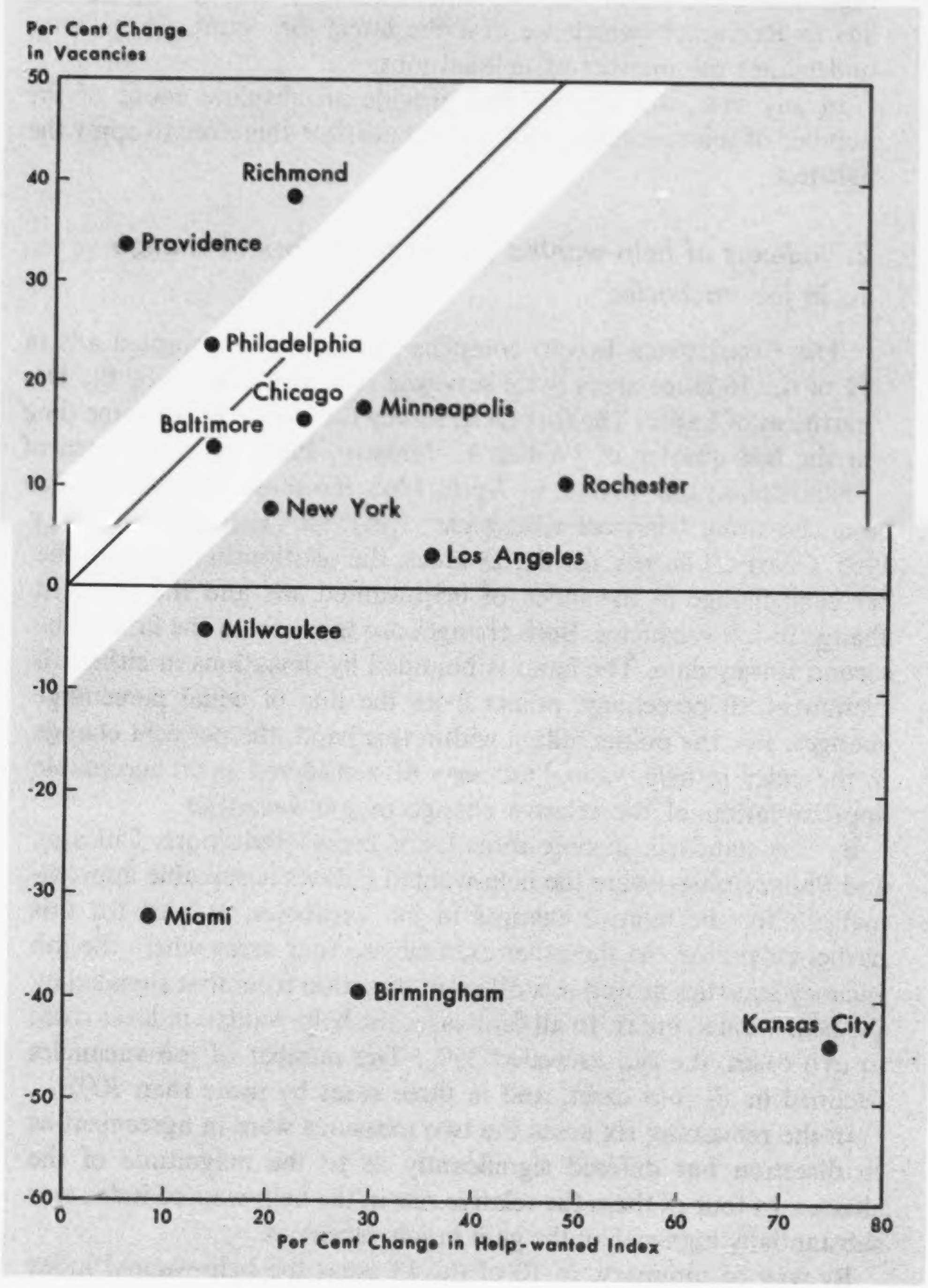
THE CONFERENCE BOARD compiles indexes of help-wanted ads in 12 of the 16 labor areas twice surveyed for job vacancies by the Department of Labor. The first DOL survey took place either some time in the last quarter of 1964 or in January, 1965, as in the case of Philadelphia; the second, in April, 1965. To these observations can be added those from the Rochester surveys of February and May, 1965. Chart 5.1 shows, for the 13 areas, the relationship between the per cent change in the index of help-wanted ads and the per cent change in job vacancies. Both changes are taken from the first to the second survey date. The band is bounded by deviations in either direction of 10 percentage points from the line of equal percentage changes. For the points falling within this band, the per cent change in the index of help-wanted ads may be considered as an acceptable approximation of the relative change in job vacancies.

By this standard, in only three labor areas—Baltimore, Chicago, and Philadelphia—were the help-wanted indexes acceptable approximations for the relative changes in job vacancies, at least for this particular period. At the other extreme are four areas where the job vacancy statistics moved in a different direction from that signaled by the help-wanted index. In all four cases the help-wanted indexes rose; in two cases, the rise exceeded 25%. The number of job vacancies declined in all four cases, and in three cases by more than 30%.

In the remaining six areas the two measures were in agreement as to direction but differed significantly as to the magnitude of the change. In four of them the relative rise in the help-wanted index was substantially higher than the gain in job vacancies.

By way of summary, in 10 of the 13 areas the help-wanted index

Chart 5.1: Vacancies and Help-wanted Advertising—All Employers: Per Cent Change in Job Vacancies and in Help-wanted Index, 13 Selected Cities.



rose by a percentage exceeding the percentage gain in job vacancies, although in two of the 10 the differences were slight. This fact is at odds with the view that the count of help-wanted ads actually understates the number of unfilled jobs being advertised. At any rate, the size of the undercount, absolute or relative, probably does not remain constant in a given labor area, and this is what is relevant to our comparisons. But we have no knowledge of how the undercount might change with variations in the tightness of the labor market.

One factor in the direction of overstatement is the difference in coverage between help-wanted ads and job vacancies. The latter were restricted to unfilled jobs with immediate starting dates in the 12 areas surveyed by the Department of Labor. On the other hand, some of the jobs appearing in help-wanted ads undoubtedly have future starting dates. The proportion with future starting dates may increase as the labor market tightens, since employers feel it is necessary to anticipate more quits which rise in a tightening market.

This difference in coverage, however, does not apply to the job vacancies surveyed in the Rochester area by THE CONFERENCE BOARD, which covered unfilled jobs with both immediate and future starting dates. Moreover, members of Rochester's Industrial Management Council (an employer organization composed mainly of manufacturing companies) usually do not advertise job openings in the local newspapers.

Despite these considerations, the NICB help-wanted index for Rochester increased by 50% between February and May, 1965, but job vacancies, according to our survey, increased only 10% (Table 5.7). If the comparison is restricted to nonmanufacturing job vacancies, the help-wanted index fails the test in Rochester by a still wider margin, since nonmanufacturing job vacancies actually declined by

Table 5.7: Job Vacancies in the Rochester Area, Actual and Projected by NICB Help-wanted Advertising Index, February, May, and August, 1965

	Job Vacancies	
	All	Nonmanufacturing
Actual February vacancies[a]	7,947	4,926
Predicted May vacancies	11,935	7,398
Actual May vacancies[a]	8,776	4,554
Predicted August vacancies	7,828	4,062
Actual August vacancies[a]	8,568	3,995

[a] From NICB surveys.

7.6% between mid-February and mid-May. A similar comparison (Chart 5.2) for all 13 labor areas demonstrates, at least for this interval, that help-wanted ads were no better as a predictor of the volume of nonmanufacturing job vacancies than as a predictor of all job vacancies.

For the Rochester area it is possible to extend these comparisons to a second interval, from mid-May to mid-August, the date of the third and last Conference Board survey (Table 5.7). Again both sets of data agree as to direction of change, this time a decline; the change is smaller in the help-wanted index than in job vacancies, but not greatly, −10.8 and −12.3, respectively, in the case of nonmanufacturing job vacancies.

3. *Help-wanted advertising for predicting job vacancies by occupation*

As we noted above, we undertook a detailed counting of help-wanted ads in the Sunday Rochester *Democrat and Chronicle* by occupation group, hereafter referred to as the Sunday index, to see if there was any promise in using this additional information to project job vacancies by occupation.

A tally was made of only the Sunday papers for two reasons: the amount of time needed to prepare a tally (3 hours a paper), and the apparent representativeness of Sundays to the daily count (Table 5.8). While the period of comparison is short, the two indexes appear to move closely together.

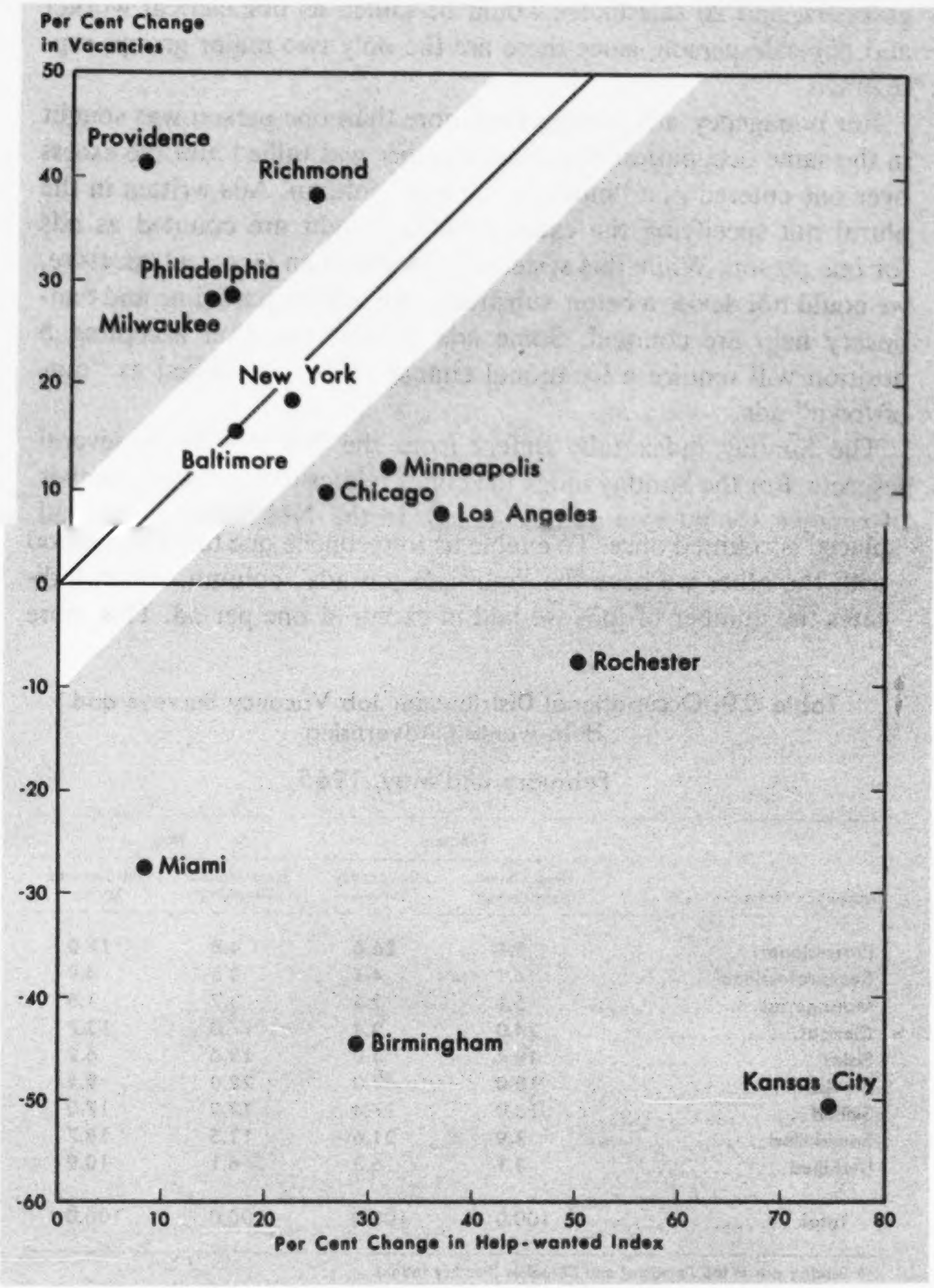
The ads were divided into male and female, agency and nonagency. The occupational breakdown conforms to the pattern of the *Dictionary of Occupational Titles*, Second Edition. Within each major group, detailed occupations are listed for those titles frequently mentioned in the Rochester newspaper (Drivers, for example).

Counting want ads by occupation leads one to make many arbitrary decisions, owing to the nature of the ads. Agency ads, for example, are handled in a different manner than nonagency ads. Most

Table 5.8: NICB and Sunday Indexes: Rochester *Democrat and Chronicle*

	1964				1965
	Sept.	Oct.	Nov.	Dec.	Jan.
NICB index (daily)	100	90	76	56	80
Sunday index (Sunday only)	100	90	76	58	84

Chart 5.2: Vacancies and Help-wanted Advertising—Nonmanufacturing Employers: Per Cent Change in Job Vacancies and in Help-wanted Index, 13 Selected Cities.



agency ads do not mention the number sought, only a plural indication of job, such as "engineers," "typists," etc. To be consistent, therefore, only one entry was made for each occupation group mentioned, regardless of the number of persons desired in the ad. For example, an ad stating that an agency wanted 34 typists, 2 stenographers, and 20 salesladies would be tallied as one clerical worker and one salesperson, since these are the only two major groups represented.

For nonagency ads stating that more than one person was sought in the same occupation, the exact number was tallied and the excess over one entered in a "multiple job ads" column. Ads written in the plural not specifying the exact number sought are counted as ads for one person. While this system surely yields an incorrect measure, we could not devise a better substitute. All ads for part-time and temporary help are counted. Some ads clearly state that accepting a position will require a locational change; these are tallied as "out-of-town" ads.

The Sunday index tally differs from the NICB tally in several respects. For the Sunday index the count relates to the actual number of persons sought in a nonagency ad. In the NICB index, each ad placed is counted once. To enable us to reconcile one tallying method with the other we have the "multiple job ads" column, which indicates the number of jobs we had in excess of one per ad. This more

Table 5.9: Occupational Distribution: Job Vacancy Surveys and Help-wanted Advertising

February and May, 1965

Occupation Group	February Help-wanted Advertising[a]	February Job Vacancy Survey	May Help-wanted Advertising[a]	May Job Vacancy Survey
Professional	5.1	26.6	4.8	17.0
Semiprofessional	4.1	4.1	3.5	4.9
Managerial	5.1	2.3	3.7	1.8
Clerical	24.0	9.4	17.0	13.7
Sales	19.4	5.0	13.6	6.9
Service	18.0	7.0	22.0	9.2
Skilled	13.0	17.4	17.9	17.0
Semiskilled	7.9	21.6	11.5	18.7
Unskilled	3.1	6.3	6.1	10.9
Total	100.0	100.0	100.0	100.0

[a] Sunday ads in the *Democrat and Chronicle* (Sunday Index).

Table 5.10: Occupational Projections of Job Vacancies. Using the Sunday Index

February and May, 1965

Occupation Group	Number of Job Vacancies		
	February Survey	Estimated May (Using Sunday index)	May Survey
Professional	2,055	2,793	1,508
Semiprofessional	422	375	439
Managerial	179	590	155
Clerical	755	934	1,203
Sales	403	451	623
Service	606	1,052	823
Skilled	1,481	2,741	1,731
Semiskilled	1,539	3,054	1,261
Unskilled	507	1,711	1,033
Total	7,947	11,740	8,776

elaborate scheme did not affect the changes in the number of ads placed over time, since both series moved closely together. The purpose of "multiple counting" of help-wanted ads is to obtain a better occupational distribution.

The differences in occupational distribution are substantial for professional, clerical, sales, service, and semiskilled workers, between want ads and survey findings (Table 5.9). Professional and semiskilled workers are greatly underrepresented, while clerical, sales, and service workers are overrepresented in newspaper advertising for both February and May. Substantial (but, on balance, somewhat lesser) differences were also found between the occupational distributions of want ads and the survey findings for nonmanufacturing employers. The Rochester evidence suggests that estimates of the occupational distribution of total vacancies by want ads will be poor.

We have also projected the numbers of vacancies in each of nine occupation groups (Table 5.10) by the per cent changes in want ads for the corresponding groups from February to May. For all but semiprofessional, clerical, sales, and service workers the projected number differed considerably from the number found in the May survey.

4. Conclusion

Thus the evidence at hand indicates that:

(1) Because of the ambiguities in the advertisements, a count of

help-wanted ads cannot, except by accident, yield a close count of the number of job vacancies.

(2) The record of the indexes of help-wanted advertising as a predictor of relative change in job vacancies has not been impressive. Only in two or three labor areas out of 13 areas, for which the comparison could be made, was the relative movement in the indexes comparable to the movement in job vacancies based on sample survey of employers. This was true whether job vacancies in manufacturing were included or excluded.

(3) The indexes of help-wanted ads appeared to be promising only as an indicator of direction of change in the number of job vacancies. They correctly predicted the direction of change in two thirds of the labor areas.

(4) In the case of the Rochester area, special tallies of help-wanted ads by broad occupation groups proved to be unreliable predictors of the occupational composition of job vacancies.

Job Orders Outstanding with the Employment Service[10]

The recently awakened interest in job vacancy statistics has led to

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a quickening of interest in some of the operating statistics of the U.S. Employment Service and its affiliated state offices. Of particular interest is the possibility that statistics on openings contained in job orders on file with the local Employment Service offices would prove to be a good proxy for job vacancy data collected from a sample of employers. These data have the important advantage of providing occupational detail. Wherever they proved to be an acceptable proxy, there would be no need to collect the data by survey. The resulting economy to the employer and the government would be considerable.

If all unfilled jobs had to be registered with the public employment services and all placements required the intercession of the same offices, the number of unfilled jobs on file with the public employment services on a given date would constitute the universe of unfilled jobs, provided the requirements were effectively enforced. In these circumstances a sample survey of employers would be entirely redundant. However, this is an extreme case, which probably does not exist in any nontotalitarian country; even where compulsory registration of jobs is a statutory requirement—as in France—enforcement is usually lax.[11] The relevant question then is what degree of underregistration is still compatible with keeping the statistics from ES job orders as complete and accurate as those derived from sample surveys of employers. More specifically, does the system of voluntary notification of jobs with the U. S. Employment Service result in a complete or even representative coverage of unfilled jobs?

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[10] As was noted in Chapter 1, a job order, in Employment Service terminology, is a request for a specified number of persons (one or more) for jobs with the same requirements. The number of job orders, therefore, is usually less than the number of persons sought.

Obviously, the answer will depend on the employers' opinion of how well the Employment Service in a particular area fulfills the recruitment, screening, and referral functions. To the extent that employers base their opinions on strictly business considerations, their attitude toward dealing with the local office of the Employment Service will depend on the competence and morale of the Employment Service personnel. Since the latter, of course, are bound to vary from area to area, adequacy of openings in ES job orders as a proxy for job vacancy statistics can best be determined area by area. The following describes our effort to determine the adequacy for the Rochester area.

It was part of the original design of the Rochester study to obtain information on unfilled jobs on file with the Employment Service offices in Monroe County for dates that coincided with the survey dates. Our request to the New York State Employment Service for these data was readily and graciously granted, and the appropriate arrangements were made at the local level, where the cooperation was equally gracious.

The offices of the Employment Service serving Monroe County provided a tabulation of unfilled jobs on file in mid-February, 1965, to coincide with our survey of job vacancies on the same date. The comparison of two series was presented in the article summarizing the February survey findings which appeared in the May, 1965, issue of *The Conference Board Record.* Subsequently we learned that the statistics on unfilled job orders, owing to certain administrative practices, were not the appropriate ones for comparison with the job vacancy statistics. The February comparison in the *Record* article, therefore, should be ignored. Unfortunately the appropriate figures for February could not be derived at a later date.

The principal source of difficulty was the administrative practice of recording a specific job order calling for more than one person as

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[11] For evidence on this see Jacques Chazelle, "The Collection and Utilization of Job Vacancy Data in France," in *The Measurement and Interpretation of Job Vacancies*, pp. 237-264.

1+. In the February count these instances were recorded as one unfilled job. Categories of job orders kept in separate files were also omitted.

The realization of these omissions for purposes of statistical reporting led to a revision of recording and tabulating procedures. The data on openings in job orders on file with the Employment Service in Monroe County in mid-May and mid-August, 1965, seem to be reasonable. They probably are characterized, however, by some overstatement. This arises because a month may have elapsed between the tabulating date and date of the receipt of the opening or a telephone confirmation that the opening still remained unfilled. Thus an opening counted as unfilled may have been filled by an employer through another hiring channel.

Another source of overstatement is the practice of counting as unfilled a job order for teachers with a future starting date who have not yet reported for duty but have signed a contract to do so. These would not be counted as job vacancies according to the definitions used in the job vacancy surveys. To achieve comparability, therefore, it is necessary to eliminate these from the count of job orders outstanding in the files of the Employment Service. The assumption is made that by May and August half of the teaching positions reported as unfilled with future starting dates were in fact filled.

Still another adjustment is required in the interest of industrial comparability—job orders filed by households and by employers engaged in agriculture, forestry, fishing, and mining. These industry classifications were excluded from the job vacancy surveys.

When the official count of unfilled jobs on file with the Rochester Employment Service as of mid-May, 1965, is adjusted for the preceding differences, a comparison can be made with job vacancies, as shown in Table 5.11.

Thus, in mid-May, 1965, the number of unfilled jobs in the files of the Employment Service amounted to only slightly more than one half of the estimated number of job vacancies in our survey of a sample of employers. Clearly, at that point in time the number of unfilled jobs on file with the Employment Service would have given an undercount of the job vacancies employers were seeking to fill.[12]

The record, however, worsens at the next point of comparison,

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[12] This is so regardless of the assumption concerning the percentage of teachers with future starting dates counted as filled. If all are taken as unfilled, the percentage would be 59.1 compared with 56.3 on the assumption used in the text. If all are considered as filled, the percentage would be 53.5.

Table 5.11: Unfilled Jobs, Based on ES Job Orders and Job Vacancies, Mid-May, 1965, by Starting Date

	All	Starting Date	
		Immediate	Future
Unfilled jobs based on job orders	4,942	4,316	626
Job vacancies	8,776	7,342	1,434
Unfilled jobs as per cent of job vacancies	56.3	58.8	43.7

Sources: Unfilled jobs from special tabulations of the Rochester Employment Service; job vacancies from Table D.7.

mid-August, 1965. On that date unfilled jobs numbered 3,113, compared with 8,568 job vacancies, or 36% of the survey total. The Employment Service series recorded a decrease of 33% between mid-May and mid-August, while the survey series on job vacancies showed a decrease of only 2.5%.

Once again, the Rochester experience appears to be typical of other labor areas. Thus, the Department of Labor summarized its own job vacancy surveys by noting that ". . . ES unfilled job openings at the time of survey were equivalent to about one third of the aggregate total of job vacancies in the surveyed areas."[13] Nothing is indicated about the extent of agreement with respect to direction and degree of change between the first and second surveys.

The conclusion seems inescapable that at the present time and for the foreseeable future the number of unfilled jobs in the files of the Employment Service will substantially understate the level of job vacancies. The limited Rochester experience suggests that unfilled jobs with the ES overstate the absolute and relative change over time in job vacancies. However, the former data may well point correctly to the direction of change.

There remains the possibility that the occupational composition of the unfilled jobs nevertheless may be representative of the composition of job vacancies. Wherever this might prove to be the case, it would not be necessary to ask the employer to report occupational details on his job vacancy schedule. The relative composition of the two series in terms of broad occupational groups for mid-May is shown in Table 5.12. The broader the occupational groupings, the greater the possibility that the two distributions will be similar.

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[13] *Job Vacancy Statistics, Hearings*, p. 71. This statistic presumably is an average for 14 areas and is based on the April, 1965, surveys. The percentages for individual areas are given on p. 72; they range from 60% in Kansas City to 15% in both Charlestons.

Table 5.12: Unfilled Jobs, Based on ES Job Orders and Job Vacancies, Mid-May, 1965, by Broad Occupation Groups

	Number		Per Cent of Total	
Occupation Groups	Unfilled Jobs	Job Vacancies	Unfilled Jobs	Job Vacancies
Professional..............	889	2,102	18.0	24.0
Clerical-sales.............	1,613	1,826	32.6	20.8
Service..................	451	823	9.1	9.4
Skilled..................	1,058	1,731	21.4	19.7
Semiskilled	561	1,261	11.4	14.4
Unskilled.................	370	1,033	7.5	11.8
All occupations..........	4,942	8,776	100.0	100.0

Source: Special tabulations of Rochester Employment Service for unfilled jobs and Table D.10.

Despite this, there is considerable difference between the two distributions. The average difference amounts to 4.5 percentage points. The most substantial differences occur in the professional group, which was significantly understated by the job orders, and in the clerical and sales group, which was appreciably overrepresented.[14] These differences, moreover, would be still larger if the comparison were limited to unfilled jobs with immediate starting dates.

The Rochester results on this point differ significantly from the findings of the Department of Labor in 12 labor areas. On a combined basis, the occupational composition by broad categories was similar for the ES unfilled job openings and the job vacancy totals.[15] The average difference amounted only to about 2.2 percentage points in both survey rounds. The distributions for individual labor areas are not shown. Undoubtedly, much of the similarity comes from the possibility of offsetting differences in combining the 14 areas into a single series. This evidence suggests that the unfilled jobs of the Employment Service may serve as an adequate proxy for the occupational composition of job vacancies at a regional or national level. There is a high probability, however, that it is not a satisfactory proxy for specific labor areas.

This analysis of alternative sets of data as substitutes for job vacancy data suggests to us that if job vacancy statistics are worth having, they must be obtained by sample surveys of employers.

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[14] In absolute terms, however, the number of unfilled jobs in the clerical and sales group on file with the Employment Service was only 12% fewer than the vacancies counted in the survey.

[15] *Job Vacancy Statistics, Hearings*, p. 72.

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Part II:

Some General Problems and Implications of Rochester Experience

6.

Defining a Job Vacancy

THE DEFINITION of a job vacancy used in the NICB surveys was presented in Chapter 3, together with the rationale for selection of that working definition. The survey results summarized in Chapter 4 and the tables in Appendix D illustrate the types of information that can be collected using the NICB definition.

In this chapter we examine the basic question of how well, in the light of our experience, the NICB definition is suited to provide job vacancy statistics for use in labor market analysis, in providing guidelines for manpower planning, and in facilitating placement. To do this effectively, we ask a series of broader questions: What are "ideal" definitions of labor demand and supply for these purposes? How do the definitions currently in use differ from these desirable definitions? How difficult would it be to reconcile current definitions with the "ideal" definitions?

In analysis and manpower planning, statistics on labor demand should be used in conjunction with statistics on labor supply. For this reason, it is quite important that the job vacancy definition correspond closely to the definition used in collecting the labor supply statistics. The following discussion, therefore, covers the demand and supply sides of the labor market in equal detail.

We begin with a brief discussion of the uses of job vacancy statistics—an expansion of the statement in Chapter 1. Some general considerations in defining job vacancies follow, together with a mention of alternative approaches to the problem. We then outline, in some detail, the various categories of demand by employers and of supply by persons which are necessary for a comprehensive review. Our purpose is to analyze the various definitions currently in use, as well as those we propose. Finally, answers are suggested to the questions posed above.

A. POTENTIAL USES OF JOB VACANCY STATISTICS

The uses of job vacancies may be divided roughly into two groups. The first group is for analysis of the labor market and the planning of government policies. For these uses we offer a series of measures computed from statistics on job vacancies and unemployment (or broader indicators of labor demand and supply), together with suggested interpretations of them. These measures require comparability of definitions for the statistics they are computed from. Therefore, later in this chapter, we provide a detailed examination of search by employers and persons.

The second group of uses is to provide more information on the condition of the labor market—national, regional, and local—for job-seekers, employers, placement agencies, and employment counselors. For these uses a comprehensive definition of employment opportunities is needed. Comparability with unemployment or labor supply measures is of secondary importance.

The principal analytic use of job vacancy data is to assist in the determination of the most appropriate policy, or balance between policies, to reduce unemployment without at the same time causing inflation.[1] That is, statistics on job vacancies, together with other economic information, can provide helpful guides to the solution of the question: How can unemployment be reduced and the output of goods and services in the economy correspondingly increased in the most efficient manner?

The demand for labor at a given level of wages and at a point in time can be conveniently divided into two parts, the "satisfied demand," represented by the number employed, and the "unsatisfied demand," represented by the number of persons employers wish to add to their payrolls but have not succeeded in doing. Similarly, the supply of labor at the same wage level and instant is composed of the "satisfied supply," those employed, and the "unsatisfied supply," those seeking work. The "satisfied" portions of demand and supply are identical, by definition, since they are the number employed[2]; we can therefore concentrate on the other components.

The number of job vacancies, appropriately defined, can furnish a measure of the unsatisfied demand for labor, while the number of unemployed can represent the unsatisfied supply. The extent to which the two measures offset one another indicates how smoothly the labor market is functioning. The greater the number of unfilled jobs matched by unemployed persons, the poorer the adjustment achieved by the labor market. The simultaneous existence of unfilled jobs and unemployed workers can be ascribed to many reasons, such as the migration of industry and persons, technological change, demographic change, occupational imbalance, etc. Here our goal is not to analyze the reasons for the "mismatching" of jobs and persons, but the more modest one of suggesting measures of the extent of the problem so that it can be better understood.

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[1] See the statement in *Job Vacancy Statistics, Hearings*, pp. 130-134.

[2] A more precise statement would be in terms of man-hours. See the discussion at the end of the following section.

A convenient term to describe the amount of mismatching of jobs and persons is "maladjustment in the labor market."[3] Without job vacancy data, neither the amount of maladjustment prevailing nor changes in it are easily determined; this holds true for both the entire economy and for more narrowly defined labor markets.

Maladjustment is defined as the smaller of the number of vacancies and the number of unemployed at a given level of prosperity. However, with the same degree of maladjustment, a rise in aggregate demand will draw persons into employment who were previously unemployed owing to structural imbalances, etc. Thus the number of vacancies offset by unemployed persons, will vary inversely with the level of aggregate demand. A practical measure of maladjustment, therefore, requires an assumption about the substitution of unemployment for vacancies as aggregate demand is increased. A plausible assumption, supported by empirical evidence from both Great Britain and the United States, is that the relation is similar to a rectangular hyperbola. If we further assume that the axes are the asymptotes and the 45-degree line is the transverse axis of the hyperbola, then M, the degree of maladjustment, is given by the geometric mean of the totals of vacancies and unemployment.[4]

$$M=\sqrt{V \cdot U}$$

Once an appropriate assumption has been adopted, we can estimate the number of unemployed that would exist if total vacancies were equal to total unemployment and use this number as our measure of the amount of maladjustment, M. Different values of M will indicate greater or lesser degrees of "mismatching" of jobs and persons, owing to structural causes (both skills and location), simple turnover, etc.[5] The adoption of a method of measuring maladjustment permits the computation of a companion measure, E, representing the excess demand for labor. E indicates which factor is predominant, demand or supply. When the number of vacancies is greater than the number of unemployed, E is the excess of vacancies over maladjustment, a positive quantity. When the number of vacancies is smaller than the number of unemployed, E is the excess of maladjustment over unemployment, a negative quantity. From these computations, we obtain two measures that show the following, at a point in time: (a) the number of persons that would be unemployed if the demand for and supply of labor were in approximate balance, in the present state of adjustment of the labor market, shown by M; (b) the extent to which the demand for labor exceeds or falls short of the amount needed to achieve equality of the demand for and supply of labor, shown by E.

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[3] The term is taken from J. C. R. Dow and L. A. Dicks - Mireaux, "The Excess Demand for Labour: A Study of Conditions in Great Britain, 1946-1956," *Oxford Economic Papers* (N.S.), February, 1958, pp. 1-33. Much of this section was suggested by their article.

[4] *Ibid.*, p. 22.

The preceding discussion can be summarized by the following algebraic statement:

Let V = number of job vacancies at a given wage level and at a point in time
U = number of unemployed at a given wage level and at a point in time
$M=\sqrt{V \cdot U}$ = amount of maladjustment, or mismatching of jobs and persons when $V=U$.
When V exceeds U, $E=V-M$ = positive excess demand.
When U exceeds V, $E=M-U$ = negative excess demand.

A hypothetical example may help to clarify the computations. Let us consider these alternatives. In Case A, there are simultaneously 4 million job vacancies and 4 million unemployed persons. In Case B, there are 1 million job vacancies and 4 million unemployed. We deduce that maladjustment is 4 million in Case A but only 2 million in Case B, while the excess demand for labor is zero in A and minus 2 million in B.

If fiscal and monetary policies were used to reduce unemployment through expansion of aggregate demand, these would be much more likely to lead to rapid price and wage increases in Case A than in Case B. The demand for and supply of labor are apparently in approximate balance in A, while there is a "labor surplus" in B, in the sense that supply exceeds demand by a large margin. We could deduce that it would be better to rely more on labor market policies in A and more on general expansionary policies, fiscal and monetary, in B. Jacob Mincer has suggested how the totals of unsatisfied supply and demand might be interpreted in terms of policy. He states that the mix of policies should be that which yields the greatest excess of social returns over social cost. That is, apply various labor market, fiscal, and monetary policies to the extent that they lead to a better allocation of resources.[6] Of course, the knowledge required to translate that statement into a practical aid to the formation of public policy can be obtained only after much study and the collection of a large and continuing body of vacancy data.

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[5] Robert Ferber has proposed a measure of maladjustment that is more restrictive than M. His measure excludes the frictional element within occupations, areas, or other classifications. It would thus more closely resemble a measure of structural imbalance. See "Introduction and Summary" in *The Measurement and Interpretation of Job Vacancies*, pp. 15-18.

Difficult definitional problems in job vacancy data arise when one wants to obtain a high degree of symmetry with labor supply. Perhaps the most troublesome problems are the determination of whether a job opening represents a real increase in the demand for labor and the related problem that openings arise from search for and training of workers in anticipation of growth and turnover. These considerations lead to the suggestions that movements in *E* be given more attention than the level of *E*.

The relationship between *E* and *M* and the implied policies is summarized in Table 6.1.

It is important to emphasize that we are not suggesting that measures derived from job vacancies be the sole guides to policy decisions. We merely suggest that these measures would make some policy-making more efficient than it is now without such measures. Further-

Table 6.1: Changes in Vacancy and Unemployment Measures and Public Policies

	E rising (positive or negative)	*E* falling (positive or negative)
M rising	Policy of constraint plus Manpower policies	Policy of expansion plus Manpower policies
M falling	Policy of constraint	Policy of expansion

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[6] "Comment," *The Measurement and Interpretation of Job Vacancies*, pp. 120-127, especially p. 125.

more, we are not stating that manpower policies are justified only when M is rising. On the contrary, an analysis of the relevant social returns and social costs might very well indicate that manpower policies would be efficient, in the economic sense, even when M is falling. The question is whether or not such programs yield a greater return than their cost. If they do, manpower policies are justified, regardless of the size and direction of movement of M. However, they are more likely to be timely when M is large or rising.

Once a decision has been made to institute manpower programs, such as training, assisting migration, etc., job vacancy statistics can be helpful in ascertaining where such programs will be fruitful. Knowledge of what may be called labor market imbalances can be obtained through the study of detailed job vacancy statistics, particularly in conjunction with corresponding unemployment statistics.[7] A continuing excess of the number of vacancies over the number of unemployed in an occupation is one indication that training or counseling persons to enter the occupation will be beneficial. Conversely, it would not seem fruitful to encourage people to train for an occupation in which the number of vacancies is smaller than the number of unemployed.

Imbalances between regions in labor demand and supply for a given skill group may be indicated by comparisons of vacancies and unemployment, and suggest programs to encourage the migration of labor or industry. Guides that would be valuable in the planning and operation of manpower programs can be computed from the number of vacancies and of unemployed, measured using comparable definitions. Measures such as E and M can be computed for an occupation or other skill group, or for a region. Following these measures for various groups over a period of time would furnish valuable leads to imbalances or other situations for which manpower policies would be helpful. Again we emphasize that vacancy data, alone or in conjunction with unemployment data, are only one indication of situations in which manpower policies should be applied. Many other pieces of economic information must be examined to make balanced judgments. Vacancy data promise to furnish valuable additional indicators, rather than substitutes for the information now in use.[8]

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[7] As mentioned in Chapter 1, fn. 9, local area data on the occupation and other characteristics of the unemployed are not presently available. They are, however, highly desirable.

[8] See the exchange by Myron L. Joseph, John G. Myers, and Gerald G. Somers in *1965 Proceedings of the Business and Economic Statistics Section*, American Statistical Association, pp. 306-316 and pp. 324-330.

B. CONSIDERATIONS IN DEFINING A JOB VACANCY AND ALTERNATIVE APPROACHES

Much of this chapter is devoted to achieving comparability between measures of labor demand and labor supply. The purpose of seeking comparability is to obtain sensitive, reasonably precise measures of the amount of friction and excess demand in the labor market and changes in these amounts. There is one characteristic of the labor market which makes complete comparability impossible and accounts for many of the difficulties discussed in the following pages of this chapter; this is the difference in size between the decision units demanding labor and those supplying it.

A large proportion of all jobs are with employers of sufficient size to demand labor on an actuarial basis. That is, they can recruit for new employees in anticipation of turnover and growth, and then assign them to specific positions as they are hired. Parallel behavior is, of course, impossible for the individual. Thus, the size of the unit that makes the decision on labor demand distinguishes its behavior from the units on the supply side. It was noted in Chapter 4 that one half of all jobs in Rochester are with employers of 250 or more employees. A firm with 250 or more employees can probably hire on an actuarial basis, at least to some extent.

A second consideration is the desirability of defining demand for and supply of labor broadly enough to encompass most relevant activities in the search for workers and for jobs. A definition that is too narrow in scope may exclude some activities that are important in understanding the labor market at various times. For specific uses or applications, various categories of demand and supply may be excluded from the totals. On the bases of both practical survey techniques and general considerations of how labor is demanded and supplied, we believe that data collected under broad concepts are more firmly based and more reliable than those collected under narrower definitions.

For example, one suggested definition of a job vacancy includes only positions that have been open for more than a week; the purpose is, of course, to achieve comparability with the official definition of unemployment of the Current Population Survey. We found in our preliminary work that it is difficult for many employers to respond to questions about the duration of a job vacancy. It seems desirable, therefore, to obtain all jobs for which employers are seeking workers; then one can attempt to identify those of short duration in a separate question so that they may be excluded from the total, if this is desired. The point is that the broader total is likely to be more accurate than the narrower one; and more information is available if both components are collected than if an attempt is made to collect only those jobs that have been open more than one week.

A related example concerns the starting date of a job. An employer can vary his labor input in the short run by overtime or slack time. Decisions to hire or lay off workers are usually longer-term, entailing costs that may be substantial. Once an employer has located a person he considers satisfactory, the starting date may often be arranged for mutual convenience, as one of the details of employment. The starting date for a particular opening, rather than being definite, may be open to negotiation. It is desirable, therefore, to collect data on all openings, with a separate question on starting date. The reliability of the larger total is probably greater than that of a subtotal, such as the number of openings with immediate starting dates. Similar considerations would apply to the supply side of the market—the date on which a person is willing to begin work.

An entirely different approach to the study of labor demand and supply is to concentrate on flows of vacancies over a period of time rather than on the stock of vacancies at a point in time. In the flow approach, the number of vacancies that appeared during, say, one month, rather than the number of vacancies remaining at the end of the month, is the subject of study, together with the flows of hires, cancellations, etc. Data on both stocks and flows are necessary for a complete understanding of the market. The collection of flow data is, in our opinion, complementary to the approach chosen for this study.[9]

Yet another approach would be to allow for variation in hours demanded and offered, by converting all vacant jobs to either man-hours per week or full-time equivalent jobs. A parallel treatment could be applied to persons seeking work. This approach would make the statistics collected useful for certain analyses and would help resolve some difficult measurement problems such as: jobs that can be successfully filled by either two part-time or one full-time worker; a person who is working 40 hours per week but wishes to work 50—part of his supply is therefore unsatisfied. While this approach is attractive, questions posed in man-hour or full-time equivalent terms may lead to data of lower quality than the simpler job or person count. If supplementary questions on hours are appended to job and person counts, they can then be converted to a man-hour or full-time equivalent basis in the course of data processing, so as to provide both sets of measures.

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[9] For discussions of the "flow" approach, see Charlotte Boschan, "Job Openings and Help-wanted Advertising as Measures of Cyclical Fluctuations on Unfilled Demand for Labor," and Charles C. Holt and Martin H. David, "The Concept of Job Vacancies in a Dynamic Theory of the Labor Market," both in *The Measurement and Interpretation of Job Vacancies*. For an empirical study of flows of vacancies, see the two papers by Robert Ferber and Neil Ford cited in Chapter 1, fn. 6.

C. THE DEMAND FOR AND THE SUPPLY OF LABOR

We define the demand for labor, at a point in time, as the number of persons that employers wish to have working at prevailing wage rates. In section A it was pointed out that this demand can be divided into a "satisfied" portion, represented by employment, and an "unsatisfied" portion, represented by unfilled jobs. It would appear to be a straightforward matter to study unfilled jobs directly, considering the number employed a separate question. However, recruiting is conducted by employers for both filled and unfilled jobs, and it is very difficult in many cases—perhaps impossible in some—to determine whether a given recruiting effort is for a filled or an unfilled position. Thus the number of persons sought outside the firm by recruiting and other means exceeds the number of unfilled jobs.

Another significant aspect is the date on which an additional person will begin to work. While in principle it seems important to make a sharp distinction between current and future demand, in practice employers may be willing to consider alternative starting dates for new hires. There are also layoffs and similar situations to be considered where the starting date is in the future.

The supply of labor, at a point in time, is the number of persons that wish to be employed at going wage rates. Supply may also be divided into a satisfied portion, corresponding to the number of employed, and an unsatisfied portion, corresponding to unemployed persons. The number of job-seekers plus the number of persons on layoff exceeds the number of unemployed, paralleling the situation in the demand for labor. It is easier to distinguish employed from unemployed job-seekers than to distinguish filled from unfilled jobs; employers can hire many persons and then allocate them between jobs that were filled or unfilled while recruiting was in progress, while a person is either working (in some carefully defined sense) or not, while searching for a job. The time aspect is also quite important for the supply of labor. Persons can seek work to begin immediately or at a later date. They may also be willing to accept alternatives.

Employers seek to add persons to their work forces by directing their efforts either to the labor market in general or to a specific group of workers. We have called the first form "general search by employers" and the second "restricted demand." Restricted demand, discussed in section F, below, refers primarily to persons who have been laid off but also includes those hired who have not yet begun to work.

Persons can offer their services in the labor market in general or to specific employers. Restricted supply, persons laid off or hired for future starting dates, is also covered in section F. To the extent that persons laid off seek work with other employers, they are engaged in general search, discussed in section E.

General search by employers refers to active recruiting. It thus corresponds, at least in part, to the job vacancy statistics that we collected. Recruiting can be conducted in a number of ways, of which the following were most important in Rochester: employee referrals, walk-in or gate hiring, placing orders with private and public employment agencies, advertising in newspapers or other media, notifying the placement officers of educational institutions of needs, and requesting workers through unions. These are, of course, but a sample of the varying methods by which workers are obtained. Employee referral, or word of mouth, was by far the most important method, with walk-in hiring second.[10]

General search by persons, both those who have recently been employed, and by those who have not, is the familiar process of job seeking. The most important channels for seeking work parallel those mentioned for employers. These include asking friends for information (corresponding to employee referrals), applying to the employment offices of firms (corresponding to walk-in hiring), registering at private and public employment agencies, reading want ads, etc.

In the following sections, we present outlines of the several forms that the demand for labor can take. A corresponding outline of the supply of labor is also presented.

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[10] See "Conceptual and Measurement Problems in Job Vacancies: A Progress Report on the NICB Study," *The Measurement and Interpretation of Job Vacancies*, pp. 415-418.

D. GENERAL SEARCH BY EMPLOYERS

The first division of search by employers we make is to distinguish new from old jobs. That is, whether the person sought will fill a newly created or reestablished position or will replace another person in an old position. For new jobs, a relevant distinction is whether the worker will start immediately or at a later date. For old jobs, useful distinctions are whether or not the position is currently occupied; if so, whether the worker will constitute a net addition to the staff of the employer or not; and whether the worker will begin to work immediately or later. In outline form:

I. *New position* (newly created or reestablished, thus an additional position).

  A. *Immediate start* (person hired will begin to work as soon as possible).

  B. *Later starting date* (person hired will begin to work at a later *fixed* date). This situation can arise from a new training program, completion of a new building, start of a new contract, or other reasons.

It may be helpful to make a further distinction between such positions for which an employer will take an applicant immediately and those for which he will not. Employers have told us that they will permit a new employee to begin work immediately if he desires, even though the scheduled starting date is in the future, when the labor market is tight or when the position calls for skills difficult or costly to find. We thus make the following division:

  1. *Can start immediately*
  2. *Cannot start immediately*

II. *Old position* (has been occupied by another person)

  A. *Currently occupied* (a person is performing the functions of the position).

    1. *Immediate start*

      a. *Net increase in staff.* The present occupant of the job will remain on the staff of the employer, either moving to another job (once a replacement is found), training the new hire, awaiting a future retirement date, etc.

      b. *No net increase in staff.* The person hired will replace the present occupant immediately, and the latter will leave the firm's employment.

    2. *Later starting date*
       The person hired will replace the present occupant at a later time. This situation can arise through retirement, pregnancy, etc.
        a. *Net increase in staff*
        b. *No net increase in staff*

B. *Not occupied* (the job is vacant).
    1. *Immediate start*
    2. *Later starting date*
       The employer is changing his production schedule, installing new equipment, will start a training program in the future, etc.

This classification is illustrated in Chart 6.1, together with a classification of general search by persons, discussed below.

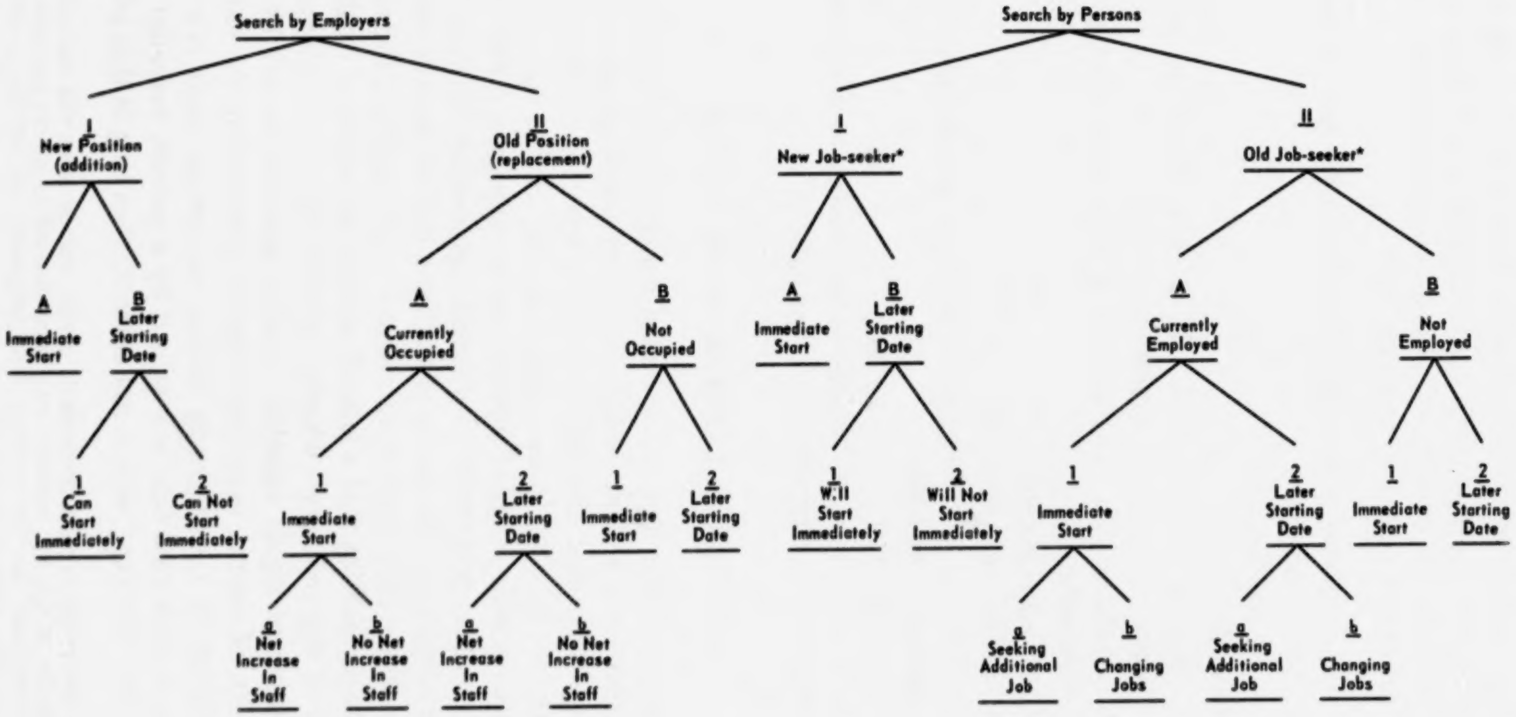
E. GENERAL SEARCH BY PERSONS

An outline parallel to that given in section D, will serve to bring out the coverage of the various definitions of unemployment and to facilitate comparisons with vacancy definitions.

The first division is between persons who were employed (and may still be) *immediately* prior to their present search and those who were not then employed. (We are avoiding the use of standard labor force status terminology to prevent either confusion or circularity of definition.) For those previously employed, we distinguish between those who are currently employed and those who are not (both groups currently seeking employment). Each of these categories, in turn, is divided into persons wishing to start work immediately and those who wish to start later. Currently employed persons are divided further into those who seek additional jobs and those who wish to change jobs. Persons who were not employed immediately prior to their present search are also divided into those who wish to start immediately and those who wish to start at a later date. The outline follows:

I. *New job-seeker* (person was not employed immediately prior to search and is not employed now).
    A. *Immediate start* (wishes to begin work immediately).

Chart 6.1: General Search.


Search by Employers
I New Position (addition)
A Immediate Start
B Later Starting Date
1 Can Start Immediately
2 Can Not Start Immediately
II Old Position (replacement)
A Currently Occupied
1 Immediate Start
a Net Increase In Staff
b No Net Increase In Staff
2 Later Starting Date
a Net Increase In Staff
b No Net Increase In Staff
B Not Occupied
1 Immediate Start
2 Later Starting Date
Search by Persons
I New Job-seeker*
A Immediate Start
B Later Starting Date
1 Will Start Immediately
2 Will Not Start Immediately
II Old Job-seeker*
A Currently Employed
1 Immediate Start
a Seeking Additional Job
b Changing Jobs
2 Later Starting Date
a Seeking Additional Job
b Changing Jobs
B Not Employed
1 Immediate Start
2 Later Starting Date

* A "new" job-seeker was not employed immediately prior to his present search; he (or she) may have been employed at some previous time, of course. An "old" job-seeker was employed (and may still be) immediately prior to his present search.

- B. *Later starting date* (wishes to begin work at a later date).
    - 1. *Will start immediately* (if employer wishes, will begin now).
    - 2. *Will not start immediately* (has other commitments, school, vacation, medical reasons, etc.).
- II. *Old job-seeker* (person was employed immediately prior to search or is currently employed).
  - A. *Currently employed*
    - 1. *Immediate start*
      - a. *Seeking additional job.* The person wishes to "moonlight," i.e., to be a multiple jobholder.
      - b. *Changing jobs.* The person is willing to change jobs immediately.
    - 2. *Later starting date*
      - a. *Seeking additional job*
      - b. *Changing jobs.* The person wishes to give notice, etc.
  - B. *Not currently employed*
    - 1. *Immediate start*
    - 2. *Later starting date.* The job-seeker wishes to delay beginning work for personal or other reasons.

F. RESTRICTED DEMAND AND SUPPLY

The most important form of restricted demand is for persons on layoff. Workers can be laid off for definite or indefinite periods of time. In the former case, the date they are to report is established at the time they are laid off. In the latter case, they can be laid off and recalled under a wide range of institutional arrangements, from formal union contract provisions to informal agreements between employers and employees. The probability that a laid-off worker will be recalled can range from near certainty to a small number; the same is true of the probability that a laid-off worker will return if recalled. The nature of the industry—whether production and employment are fairly stable or highly variable, whether seasonal variations are great, etc.—is, of course, quite important in determining the nature of a given layoff. In the following outline, we assume there is a job in existence in each case that is matched by a person, hereafter referred to as the "worker," who is not currently working in that job.[11]

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[11] There is one group of jobs, presumably small, omitted from this discussion. These are jobs for which the workers have been notified to report immediately but have not yet done so. The workers were originally laid off for indefinite periods. See the discussion in section G.

The outline also applies to the case where an employer reaches an agreement with a job-seeker and the person hired will start to work at a later date; a case of general search is thus replaced by a situation quite similar to a layoff with a definite date of recall.

Restricted demand of employers

I. *Layoff.* The job is held for a specific person.

II. *Hired, later starting date*
  A. *Less than 30 days* (from now)
  B. *30 days or more* (from now)

This classification is illustrated in Chart 6.2, together with a corresponding classification for persons.

The outline presented here for the worker side of layoffs and for persons who have not yet reported for work follows closely the employer side. Further, the introductory paragraph of the employer section on layoffs is equally relevant to the worker side.

In this portion of the outline, as in all others, priority is given to general search. That is, if a person on layoff is seeking another job, he is considered to be engaged in general search and is covered in that section of the outline, rather than in "restricted supply."

Restricted supply of persons

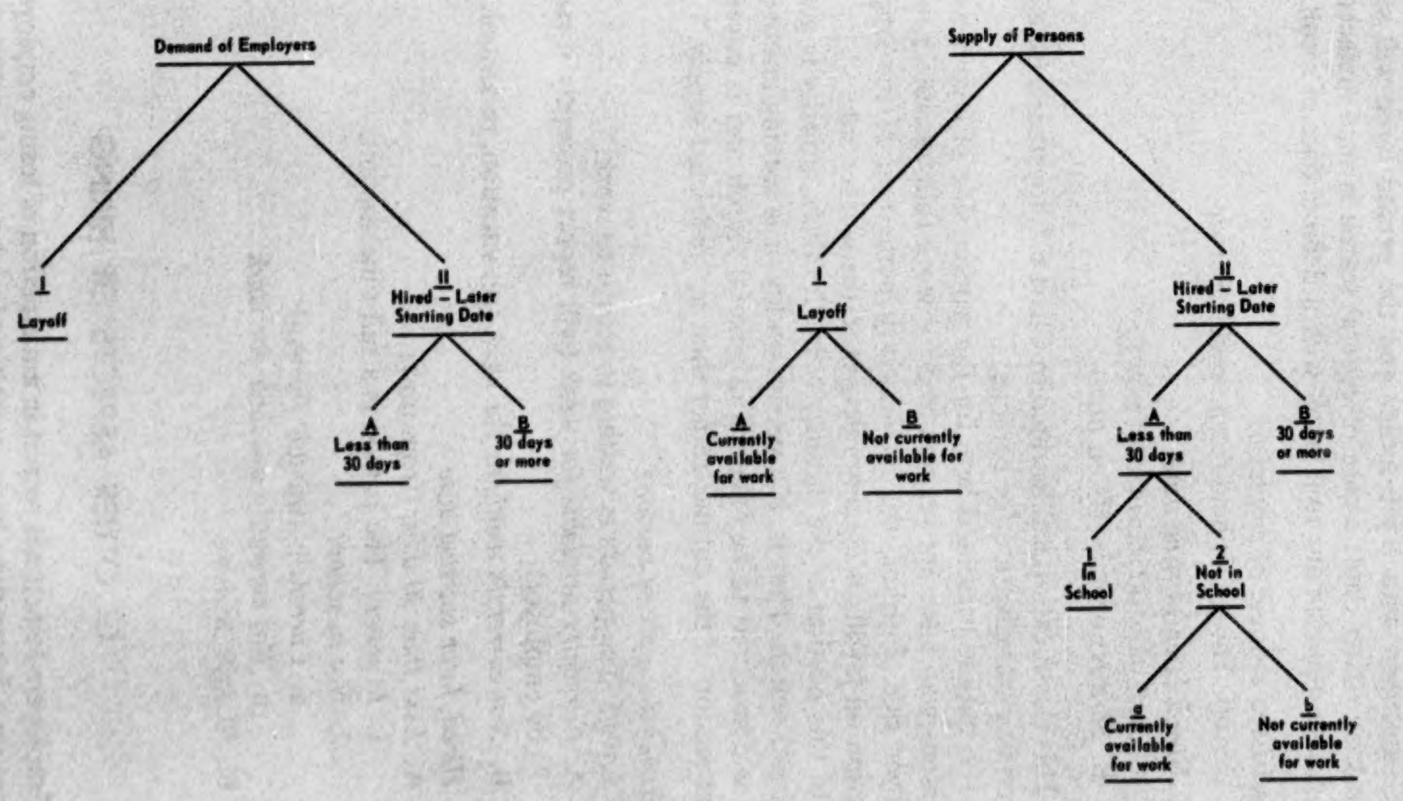
I. *Layoff.* The person is waiting to return to work.
  A. *Currently available for work* (will report promptly if recalled by employer).
  B. *Not currently available for work* (on vacation, in school, etc.).

II. *Hired, later starting date*
  A. *Less than 30 days* (from now)
    1. *In school.* The person is a full-time student.
    2. *Not in school*
      a. *Currently available for work*
      b. *Not currently available for work*
  B. *30 days or more*

G. OTHER ASPECTS OF HIRING

Employers sometimes recruit in anticipation of losing employees—either on a forecasting basis, recruiting in advance of notification of resignation, or for specific positions. In both cases it is similar to the section of the outline heading "old position, II," in section D. Spe-

Chart 6.2: Restricted Demand and Supply.


Demand of Employers
I
Layoff
II
Hired – Later Starting Date
A
Less than 30 days
B
30 days or more
Supply of Persons
I
Layoff
A
Currently available for work
B
Not currently available for work
II
Hired – Later Starting Date
A
Less than 30 days
B
30 days or more
1
In School
2
Not in School
a
Currently available for work
b
Not currently available for work

cifically, the parallel is for old positions currently occupied, and most of the remarks there apply to this situation. The importance of hiring in anticipation of turnover, on a forecasting basis, is that such recruiting may increase when labor markets become tight, as the excess of vacancies over unemployment increases. (This results in part from the lengthening of the average period of time required to recruit new employees; see the discussion under "Duration of vacancy" in Chapter 4.) This will tend to increase the demand side of the labor market, as indicated by job vacancy statistics, over the supply side.

Correspondingly, employed persons may seek new jobs to replace their current positions. That is, they are job-changers, covered in "old job-seeker, currently employed." There is a distinction, already mentioned above, stemming from the size of the unit: Large employers can act on an actuarial basis, while individuals cannot. Search by employed persons may also vary with tightness of the labor market. When jobs are plentiful, persons intending to change jobs may quit and then look for work—possibly after a few weeks' vacation. When jobs are scarce, on the other hand, a job-changer is likely to postpone quitting until a new position has been secured. Thus search by employed job-changers will be greater, the *less* tight the labor market, owing to the longer duration of unemployment. This is the opposite of the behavior of employers. We should thus expect the demand side to be exaggerated relative to the supply side in tight labor markets, and the opposite in loose labor markets.[12]

An employer in need of temporary help has two alternatives. He can request labor from a temporary help agency or recruit for a temporary employee. The second alternative is comparable with recruiting for any other position and is therefore covered in "general search by employers," section D. A temporary employee may be sought for a new or for an old position, and may start immediately or at a later date. Recruiting employees for summer help is a frequent practice; this falls under either the heading "old position, currently occupied, later starting date," for vacation replacements, etc., or the heading "new position, later starting date," for seasonal increase in the work force.

Orders placed with temporary help agencies are somewhat different, but have basic similarities. Temporary help agencies hire workers whose services are sold to other employers on a contract basis. It may be helpful to think of these agencies as subcontractors of labor. They guarantee the quality of the services they provide and keep employment records, pay their employees directly, make social insurance payments, etc. Their employees, when not working, can be either layoffs or temporarily withdrawn from the labor market.

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[12] There are, of course, several other factors that either offset or reinforce these tendencies. These include the effects of tightness on encouraging or discouraging search by persons both in and out of the labor force, as well as corresponding effects on search by employers.

When an employer has an order outstanding with a temporary help agency, he is engaging in a form of restricted demand. If the temporary help agency is able to furnish a worker, the original demand is satisfied either from their pool of employees or by outside recruiting. The action by the temporary help agency will fall under restricted demand or general search and is therefore covered in the outline.

Two groups of jobs and corresponding groups of persons are omitted from the outlines and discussion in this chapter. They are: (a) jobs for which persons have been hired and told to report for work, but have not yet done so; (b) jobs for which workers have been told to report back from indefinite layoff, to begin work promptly, but have not yet appeared. Both categories are presumably small and the situations of short duration.

H. IDEAL DEFINITIONS FOR ANALYSIS

In section A, two measures were proposed that would, we believe, aid economic analysis of the labor market and furnish useful guidelines for the application of policy. One of these is *E*, job vacancies less maladjustment; it was suggested that it would indicate movements in aggregate demand as they result in a "tightening" or "loosening" of the labor market. The other is simply *M*, the degree of maladjustment.

For *E*, we seek a measure that indicates the difference between the actual number of workers sought and the number seeking work. Therefore, by our definition, we exclude: recruiting for jobs currently occupied when there will be no net increase in staff; and job-seeking by employed persons who wish to change jobs (II-A-1-b and II-A-2-b of the foregoing outlines of general search by employers and by persons).

It seems useful to distinguish between "immediate" and "future" demand and supply. When employers recruit for persons who will not start work until a later date, and persons seek work that will begin at a later date, the market pressures are different from those that result from search for immediate starting. (It may be difficult to maintain this distinction in all cases. For example, employers will sometimes change the starting date from future to immediate in order to accommodate a new hire. Similarly, a job-seeker may be willing to begin immediately, although his preference is for a later date, in order to accommodate an employer.) Much of what we have called restricted demand falls in the "future" category; all layoffs as well as hires with later starting dates result in pressures with a different time impact than immediate search.

Despite the difficulties, we feel that the distinction between immediate and future demand and supply is important because it helps to clarify certain troublesome problems. For example, when a person is laid off and instructed to report back to work in two weeks, there is an immediate effect on unsatisfied supply—it is increased—and a future effect on unsatisfied demand. The decline in the total demand for labor at the time of the layoff increases unsatisfied supply immediately; this is offset by an increase in unsatisfied demand with delayed or future effects.

With these considerations, the following definitions, outlined in Table 6.2, are proposed as "ideal."

Unsatisfied Demand

(1) The number of persons sought by employers *except* when a new hire will immediately replace a current employee. That is, we include all jobs for which employers are recruiting that will result in at least a temporary increase in staff. (The components with immediate effects are bracketed as D_1, those with future effects as D_2, in Table 6.2.)

(2) The number of persons on layoff for whom the employer is holding jobs. (All with future effects; part of D_2 in Table 6.2.)

(3) The number of persons hired to begin at later dates. (All with future effects; part of D_2.)

Unsatisfied Supply

(4) The number of persons seeking work, employed and unemployed, except those who wish only to change jobs.[13] That is, we

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[13] This definition of unsatisfied supply includes the search of persons seeking second or third additional jobs. It thus constitutes a definite departure from the unemployment concept, but is necessary in order to obtain a comprehensive definition of unsatisfied, or additional supply of labor.

Table 6.2: "Ideal" Definitions of Unsatisfied Demand and Supply

	Unsatisfied Demand		Unsatisfied Supply	
		Immediate Effect		
D_1	**General search by employers**		**General search by persons**	S_1
	New position:		New job-seeker:	
	Immediate start (I-A)		Immediate start (I-A)	
	Later starting date—		Later starting date—	
	Can start immediately (I-B-1)		Will start immediately (I-B-1)	
	Old position:		Old job-seeker:	
	Currently occupied—		Currently employed—	
	Immediate start—		Immediate start—	
	Net increase in staff (II-A-1-a)		Seeking additional job (II-A-1-a)	
	Not occupied—		Not employed—	
	Immediate start (II-B-1)		Immediate start (II-B-1)	
			Restricted supply of persons	S_2
			Layoff (I)	
			Hired—later starting date (II)	
		Future Effect		
D_2	**Restricted demand of employers**			
	Layoff (I)			
	Hired—later starting date (II)			
D_3	**General search by employers**		**General search by persons**	S_3
	New position:		New job-seeker:	
	Later starting date—		Later starting date—	
	Cannot start immediately (I-B-2)		Will not start immediately (I-B-2)	
	Old position:		Old job-seeker:	
	Currently occupied—		Currently employed—	
	Later starting date—		Later starting date—	
	Net increase in staff (II-A-2-a)		Seeking additional job (II-A-2-a)	
	Not occupied—		Not employed—	
	Later starting date (II-B-2)		Later starting date (II-B-2)	

include all job-seeking that increases the supply of labor. (Immediate effects in S_1, future effects in S_3, in Table 6.2.)

(5) The number of persons on layoff, waiting to be called back to work. (All with immediate effects; part of S_2.)

(6) The number of persons hired to begin at later dates. (All with immediate effects; part of S_2.)

Using these definitions, we can construct *E* and *M*, the measures of excess demand and maladjustment discussed in section A of this chapter. A measure of maladjustment, covering both immediate and future effects, would be computed using all the categories in Table 6.2 ($D_1 + D_2 + D_3$ for demand, $S_1 + S_2 + S_3$ for supply). The corresponding measure of excess demand would use either all categories of demand, or all of supply, according to which was dominant. More sensitive measures of *E* and *M*, reflecting only immediate effects, might employ only category D_1, for demand, but both S_1 and S_2 for supply.

I. THE CONTENT OF CERTAIN DEFINITIONS IN USE

Two definitions of job vacancies that have been used in surveys in the United States are those of the Bureau of Employment Security of the U. S. Department of Labor (DOL)[14] and the NICB.[15] The DOL definition excludes all later starting dates and all restricted demand; it thus includes sections I-A, II-A-1, and II-B-1 of general search by employers. The NICB definition includes all of general search by employers and excludes all restricted demand (see Chapter 3).

The two job vacancy definitions just mentioned referred to a point in time. The following two definitions of unemployment refer to the activities of the person during a period of time preceding the survey date. The standard definition of unemployment is that used in the

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[14] See statement of Arthur M. Ross in *Job Vacancy Statistics, Hearings*, pp. 32-33.

[15] Robert Ferber and Neil Ford have also collected data on stock of job vacancies. These were only one component of a variety of data that were simultaneously measured, including flows of vacancies, additions, and departures, current and anticipated. It is inappropriate to compare one component of this highly ingenious and interesting experimental study with studies designed for a different purpose. See the works by Ferber and Ford, previously cited.

Current Population Survey (CPS).[16] A second definition we shall examine is now being tested by the Bureau of Labor Statistics in a program called the Monthly Labor Survey (MLS).[17] The CPS definition of unemployment includes a number of categories, of which the most important is persons who did not work in the previous week and were looking for work. Other categories of unemployed are persons who were not working but would have been looking for work except that:

(1) They were waiting to be called back to a job from which they had been laid off.

(2) They were temporarily ill.

(3) They believed there was no work in their line or in the community.

(4) They were waiting to report to a new wage or salary job within 30 days (and were not in school during the survey week).

Classification of persons is made according to a system of priorities:

(a) Labor force activities take precedence over nonlabor force activities.

(b) Working takes precedence over looking for work.

(c) Looking for work takes precedence over being away from a job because of a vacation, industrial dispute, and the like.

Using the preceding definition, we can determine that the following groups in the outline are classified as unemployed in the CPS:

(1) New job-seekers who will start immediately (I-A and I-B-1 of general search by persons).

(2) Old job-seekers not employed who will start immediately (II-B-1 of general search by persons).

(3) All layoffs (I of restricted supply of persons).

(4) Persons hired who will begin work within 30 days and are not in school (II-A-2 of restricted supply of persons).

Presumably, persons seeking jobs for future starting dates, who will *not* begin immediately, are not included in the CPS unemployment definition. However, there are no instructions in the CPS directing enumerators *not* to include persons seeking a future job; many such persons may now be included in unemployment statistics. This uncertainty is eliminated to a large extent in the MLS, where each respondent is asked if he, or she, is currently available for work and a positive reply is required for classification as unemployed.

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[16] See *Concepts and Methods Used in Household Statistics on Employment and Unemployment from the Current Population Survey* and *How the Government Measures Unemployment*, BLS Reports Nos. 279 and 287.

[17] Robert L. Stein and Daniel B. Levine, "Research in Labor Force Concepts," an unpublished paper presented at the 1965 meetings of the American Statistical Association.

The MLS definition of unemployment is very similar to the CPS definition; the major differences between the two data collection programs are in the phrasing of the questions asked, generally more specific in the MLS, in order to classify persons. In addition, the responses to two questions not included in the CPS are used in the MLS. The first is on current availability for work, mentioned above. The second is whether or not the person looked for work during the preceding four weeks. The unemployed, according to the MLS, are the following categories:

(1) Persons without a job who looked for work during the past four weeks and are currently available for work (approximately I-A, I-B-1, and II-B-1 of general search by persons).

(2) Persons who were ill during the survey week but looked during the previous four weeks (minor components of the same sections as in #1).

(3) Persons who are waiting to be called back from layoff and were available for work in the past week (I-A of restricted supply of persons).

(4) Persons waiting to start a job within 30 days, not in school, and available for work in the past week (II-A-2-a of restricted supply of persons).

The MLS definition is thus conceptually more restrictive than the CPS definition.[18] Layoffs and persons hired for later starting dates who are not currently available for work are out of the labor force in the MLS but unemployed in the CPS. Persons who were not working but would have been looking for work except that they believed there was no work in their line or in the community, classified as unemployed in the CPS, are out of the labor force in the MLS. Finally, one of the priorities used in the CPS, "looking for work takes precedence over being away from a job because of a vacation, industrial dispute, and the like," is reversed in the MLS; as a result, all persons with a job (other than layoffs or new hires with later starting dates) are employed in the MLS, but unemployed in the CPS.

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[18] Despite the transfer of several categories of persons out of unemployment, the MLS obtains a slightly higher estimated total number of unemployed. The primary reason is the four-week period allowed for search; while not specifically stated, most persons apparently assume that search during the preceding week is required in the CPS. See the paper by Stein and Levine.

J. PROPOSALS FOR RECONCILIATION OF THE SEVERAL DEFINITIONS

Two aspects of reconciliation are of similar importance: to approximate ideal definitions and to achieve symmetry between the definitions of job vacancies and unemployment. To facilitate the following discussion, the various definitions are summarized in Table 6.3. This table may be most easily used in conjunction with Charts 6.1 and 6.2, which outline general search and restricted demand and supply.

Both definitions of vacancies include old positions that are currently occupied, while both unemployment definitions exclude all job-seekers that are currently employed.[19] This lack of symmetry is undesirable, and all four definitions depart from the ideals in this respect. As noted earlier, it is very difficult, and often impossible, for employers to state whether a person sought will replace a person currently employed, replace a person who has left the firm, or fill a newly created position. In the course of our preliminary study, in September and October, 1964, we asked employers to identify separately vacancies that were for (a) new positions; (b) old positions, occupied; and (c) old positions, not occupied. Some employers stated that they were unable to furnish the information, because they could not identify individual vacancies in that way. A group of recent high school or college graduates may be hired, for example, and entered in a training course. Their specific assignments will be determined only after the completion of the training program; the question of occupancy is thus indeterminate. Another example is a job that is occupied because it is essential, while another stands empty; the employer recruits for the occupied job, yet as soon as a hire is made, the person temporarily occupying the essential job shifts to the vacant position. It is our opinion, in short, that this element of incomparability cannot be satisfactorily removed from the demand side.

The question, then, is what to do with the definitions of unemployment, with respect to both comparability to the vacancy definition

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[19] The CPS includes in the unemployed, persons with a job but not at work because of bad weather, etc., who are seeking work. These are treated as employed in the MLS.

Table 6.3: Definitions of Vacancies and of Unemployment Currently in Use

Vacancies	Unemployment
1. Department of Labor	1. Current Population Survey[a]
General search by employers	General search by persons
New position:	New job-seeker:
Immediate start (I-A)	Immediate start (I-A)
	Later starting date
Old position:	Will start immediately (I-B-1)
Currently occupied	
Immediate start (II-A-1)	Old job-seeker:
Not occupied	Not employed
Immediate start (II-B-1)	Immediate start (II-B-1)
	Restricted supply of persons
	Layoff (I)
	Hired–later starting date:
	Less than 30 days
	Not in school (II-A-2)
2. National Industrial Conference Board	2. Monthly Labor Survey[b]
General search by employers	General search by persons
New position (I)	(same as CPS, above)
Old position (II)	Restricted supply of persons
	Layoff:
	Currently available for work (I-A)
	Hired–later starting date:
	Less than 30 days
	Not in school
	Currently available for work (II-A-2-a)

[a] The following minor categories of unemployment in the CPS are omitted from the list: Persons who would have been looking for work except for temporary illness; persons who would have been looking for work except that they believed there was no work in their line or in the community. See text.

[b] Persons who would have been looking but were temporarily ill are also considered unemployed. The criteria for availability and length of time since last search differ from the CPS. See text.

and proximity to the ideal definitions. It is relatively easy to distinguish a job-seeker who is working from one who is not. In principle, there seems to be no reason why data on employed job-seekers could not be collected in the CPS or MLS and exact comparability achieved. These data could also distinguish between persons seeking additional jobs and those wishing to change jobs.[20] The best solution may then be to exclude job-changers from the supply side and thus achieve exact comparability, in this respect, with the ideal definitions. The demand side would then be overstated to some, although probably small, extent.[21] An additional source of information on job-seeking by employed persons, both for additional and for replacement jobs, would be available for analysis.

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[20] Multiple jobholding is extensive in the U. S.; about 5% of all employed persons held two jobs or more in May, 1964. U. S. Bureau of Labor Statistics, *Multiple Jobholders in May, 1964*, Special Labor Force Report No. 51, 1965. A significant number of additions to the supply of labor presumably represent employed persons seeking additional jobs.

A second area of disagreement among the four survey definitions and the ideal definitions concerns search for persons or jobs with future starting dates. These are excluded from the three government measures, in principle, but included in the NICB and ideal definitions. Much information about the labor market can be obtained from data on later starting dates. Further, our survey experience has suggested that collecting information on vacancies with later starting dates is very helpful in obtaining accurate data. That is, we suspect that a request for only vacancies with immediate starting dates will result in the erroneous inclusion of vacancies with later starting dates in some cases and in the omission of some with immediate starting dates in other cases.

On the supply side, the question on current availability for work, employed in the MLS, should eliminate any ambiguity. The question remaining is whether or not the additional information to be gained from data on job-seeking for later starting dates can be collected at a reasonable cost. We suspect that it could, simply by asking an additional question as to the date of future availability. If data are collected on vacancies with future starting dates, they can easily be shown separately, as we have done in our tables; the same is obviously true for unemployment. There can be no valid objection to a *definition* that includes later starting dates when they can be shown separately; the relevant question is whether or not the additional information obtained is worth the additional cost.

The last major point for reconciliation concerns restricted demand and supply, or layoffs and hires with later starting dates. The simplest solution in a statistical program would be to treat the information collected for persons, in the CPS or MLS, as the exact parallel of the information for employers. This would be the least expensive and has other advantages as well. The complicating factor is that layoffs from the demand side may not correspond to layoffs on the supply side. Persons on layoff are those waiting to return to work. A worker laid off may not wait to return to the same job, however, but may seek, or find, other employment; the tighter the labor market, the more likely this is to happen, all other things considered. The employer may thus consider the job held for a specific person, and would report it as such if asked, while the person considers the job either one of several alternatives or no longer relevant to his employment.[22] There are, of course, other possibilities. The point is that jobs held for persons (the employer side) will probably exceed the number of persons waiting to be called back (the worker side). The use of the supply data collected in the CPS or MLS may furnish a temporary solution, but some experimentation with the collection of layoffs from employers is warranted.

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[21] Our knowledge of the quantitative importance of the various categories is slight. For the demand side, we collected some fragmentary information in our preliminary survey of 27 employers in Rochester. Of the vacancies that those employers were able to classify, only 10% were for old positions currently occupied, 30% were for old positions not currently occupied, and 60% were for new positions. It is risky to generalize from these results, owing to both the restricted nature of the sample and the tight labor market. Further, we do not know what proportion of the 10% represented openings for which the new hire would increase the employment total of the firm. For the supply side, no parallel data are available to our knowledge. That is, we are aware of no information on employed job-seekers.

To summarize this discussion, we propose that the following steps be taken:

(1) Data on job-seeking by employed persons should be collected, distinguishing the search for additional jobs from that for different jobs. This is desirable for the additional information to be derived and for achieving closer comparability with job vacancy data.

(2) Vacancies with later starting dates should be collected, by date of starting. This will yield much additional information and aid in the collection of accurate data. Such information is particularly valuable for placement.

(3) Data on search by persons for jobs to begin later should also be collected.

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[22] For a discussion of workers' behavior following layoff, see Harold L. Sheppard and A. Harvey Belitsky, *The Job Hunt: Job-Seeking Behavior of Unemployed Workers in a Local Economy*, Johns Hopkins Press (forthcoming).

7.

Accuracy of Survey: Nonsampling Aspects

THERE ARE MANY possible sources of error in vacancy surveys. Some of these, associated with the formal aspects of probability sampling, are discussed in Chapter 8. The present chapter evaluates errors arising from misunderstanding, transcription, false reporting, and other "human" sources. The discussion will concentrate on the experience of the NICB surveys. This concentration is dictated by the nature of the topic and the limitations of our experience. While this chapter is more specific to the NICB surveys than either Chapter 6 or Chapter 8, we believe a detailed evaluation of our surveys will contribute more to the understanding of the nonsampling aspects of accuracy than a general, but necessarily vague, discussion.

A. DEFINITION OF A JOB VACANCY

The formal aspects of the definition of a job vacancy are covered in Chapter 6. Now we focus our attention on those attributes of the NICB definition that were likely to affect the accuracy of the data collected. Three of these may be singled out: the meaning of "actively recruiting"; the omission of laid-off workers on recall; and the omission of those who were hired and had not yet reported for work.

The survey definition, it will be recalled, is "unfilled job openings, present and anticipated, for which you are actively recruiting employees, on (the survey reference date), from outside your organization." The instructions deliberately avoided a precise definition of "actively recruiting." If an employer indicated that he was unsure of the meaning of the term, the interviewer mentioned a few examples.

As a result, very little active effort on the part of the employer would be required in order to fulfill the conditions of the definition. This fact has drawn criticism from some persons who say that employers could merely say: "Yes, I want three or four workers," and that this would satisfy our definition (qualifying under the heading of gate-hiring, accepting walk-ins). It has been suggested that we should have made more stringent requirements, setting forth exactly what is meant by actively recruiting, and excluding vacancies which do not meet certain standards of recruiting.

We cannot definitely prove that our data are not subject to this criticism. However, the interviewers believe the vacancies reported were valid in the sense that the employers were striving to fill them. In lieu of stating specific requirements of actively recruiting, we relied more on statements of the definition in the letter sent to each respondent before each survey, and on the repetition of this question at the time of the interview. Enumerators were instructed to restate the definition, and to explain it if there seemed to be any question of insufficient seriousness of intent on the part of employers.

On the basis of preliminary interviews in September and October, 1964, we decided to exclude layoffs from our survey. It is difficult to be certain that some layoffs have not already caused error in our data by their inclusion as vacancies. However, discussion with persons connected with the labor market in Rochester has reassured us in our earlier judgment that the total number of layoffs was very small in the Rochester area in 1965.

A third possible source of error associated with our definition is the exclusion of jobs for which persons have already been hired. That is, a bargain has been struck between the employer and the prospective employee but the new employee has not yet reported for work. A related problem is where a worker has been hired, has reported, and is now in an orientation or training program but has not yet filled the job for which he was hired. Some employers describe jobs of this type as "unfilled" on their employment records until the worker is actually performing the duty for which he was hired. Any such respondent overlooked the qualifying phrase "actively recruiting." We found that one employer had erroneously reported some vacancies in this way.

These three types of response error, traceable to erroneous interpretation, illustrate the difficulty of striking the proper balance between a brief definition that is more likely to be read or listened to and elaborately articulated definitions covering all cases which tend not to be read or understood in an interview. It is our conclusion, however, that errors resulting from vagueness or other difficulties in the definition were numerically unimportant. By the third survey, we think, most errors of this kind had been uncovered, and in such cases we obtained corrections of the earlier data.

B. QUESTIONNAIRE

The questionnaire form used in our survey was quite simple (Appendix B). It was inspired by the forms drawn up by the Bureau of Employment Security for their surveys in 16 areas. Specifically, the questionnaire form is an abbreviated version of that used in the preliminary interviews in September and October, 1964. The form varied slightly from survey to survey owing to minor revisions in the headings and to the inclusion of a special question in August, but was basically uniform. We were not able to improve on the questionnaire form, and we do not feel that it was a source of appreciable error.

C. METHOD OF INTERVIEW

As noted earlier, each respondent received a letter describing the survey and its purpose, setting forth the definition of a job vacancy, specifying the details requested, and stating how and when the employer would be contacted (Appendix B). More than 90% of the employers were visited during each of the three surveys. The data were nearly always transcribed on the spot by the interviewer. The only exceptions were a few very large employers who either (a) presented us with a list of vacancies prepared in advance or (b) discussed the survey with us, assembled the data later, and mailed the list to us.

In our judgment, the collection of data by interview and on-the-spot transcription is much more effective than collection through the mail. This is particularly true during the introductory stages of a new survey. Once the value of the survey is recognized by the respondent and there is a full understanding of the data requested, the balance of advantage probably shifts to the use of collection by mail, since at this point relative costs must enter into the decision.

There are several reasons for our judgment. Even if the respondent seriously intends to provide the requested data, his intentions are less likely to be frustrated if there is a knowledgeable interviewer to answer his questions concerning interpretation of definitions and their application to special cases. Moreover, despite good intentions, it is all too easy for busy people to procrastinate if they are left to themselves. A fixed appointment with an interviewer has a disciplinary effect.

In the case of the uninterested employer, a personal interview is more likely to obtain a response than a mail questionnaire. Further, an uninterested employer is less likely to give a casual, off-the-cuff response to an interviewer than to a mail questionnaire.

A further advantage of the personal interview is that we were able to ask supplementary questions, which would be difficult to answer by mail. Some of these questions required explanation and discussion by the interviewer in order to ensure that the question was fully understood. In addition, employers are often hesitant to give estimates of operating details for which they have no accounting records. An interview may elicit a response where an employer is unwilling to commit himself on paper.

Only one person was interviewed in most firms. This person was usually the personnel manager or employment manager, in firms of sufficient size to employ a person with one of these titles. For small firms, the person interviewed was usually either the manager or the proprietor. We tried in all cases to contact the person who was directly connected with hiring and would thus have the most direct knowledge of the firm's hiring activities. In a few cases, this required contact with more than one person. An example would be where hiring activities were separate for the office and the factory.

The study by Robert Ferber and Neil Ford stressed the need to contact several "hiring points" in large firms.[1] We did not find this need in Rochester. The large employers either had central hiring points, where complete information was available, or preferred to assemble the data themselves in order to eliminate duplication. There was one type of employer, however, where complete coverage would often require several contacts—chain food stores. In some chains, part-time help is hired directly by each store manager, and information on recruiting is available only on full-time help, in the central office. We did not visit the individual stores of such chains and therefore may have missed some part-time vacancies.

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[1] "The Time Dimension in the Collection of Job Vacancy Data," *The Measurement and Interpretation of Job Vacancies*, p. 451.

D. ABILITY AND TRAINING OF INTERVIEWERS

The role of interviewers in ensuring the accuracy of response cannot be overemphasized. The interviewing staff, as we have explained elsewhere, was composed of six employees of THE CONFERENCE BOARD and eight employees of Bernardine Slade Market Research, Inc. This organization, with headquarters in Rochester, New York, is engaged in market surveys. The eight interviewers assigned to the job vacancy survey were all experienced in survey work. The assignments of sample employers were made roughly on the basis of employment size. The NICB interviewers, all with training in economics, interviewed the employers with 250 or more employees, in most cases.

A two-day training session preceded the pretest survey in January, 1965, which was designed not only to test the schedule but also to provide an opportunity for the interviewers to become familiar with the variety of questions and problems that emerge in the course of a survey. An additional briefing session attended by all interviewers was held immediately before the first full sample survey in mid-February, 1965. Further training sessions were held prior to the May and August surveys.

In retrospect, the training seems to have been minimal, to judge by the continuous referral of questions and problems to the supervisors even during the third survey. However, our own *ad hoc* training effort indicates that the proper training of interviewers could be achieved without great difficulty in launching a continuing collection of job vacancy statistics.

E. RESPONSE ERRORS

Response errors can be grouped under three main headings: accidental errors, purposeful errors, and errors owing to lack of information or recall. Accidental response errors probably arise from two sources: first, from misunderstanding of the definition or of the specific question asked by the interviewer; and second, from the fact that most of the persons interviewed were very busy and had to take time out from important tasks in order to be interviewed. There were frequent interruptions from the telephone or other persons asking questions of the interviewee, and these probably resulted in some accidental response error.

Purposeful response errors have been frequently discussed by those critical of job vacancy information. For example, they have stressed the possibility that employers would overstate the number of vacancies, for various reasons, stating that they wanted more workers than they were actually seeking. A more likely possibility, in our opinion, is that the employer would say he had no job vacancies in order to get rid of the interviewer; this would save the employer the time he would otherwise have to spend during the interview. While we cannot be certain that purposeful response errors were not important, we do not think that they were. The interviewer can often control this problem by his attitude. If he, or she, shows willingness to return at a time that is convenient to the employer and is alert to the problem of the employer's work load, the employer will usually reciprocate by making an effort to answer correctly.

Response errors can also arise from lack of information on the part of the person interviewed. If the wrong person is interviewed—one who does not have knowledge of the firm's current recruiting—erroneous information can be obtained. This can result if the person interviewed is either too high in the administration of the firm or too low. A person too highly situated frequently is not in close touch with the day-to-day operations of recruiting, unless he has prepared the information in advance by contacting those directly associated with hiring.

Response error resulting from lack of information can be associated with record keeping. There has been a great deal of discussion of employers' practices in the keeping of job vacancy records. The 1956 job vacancy study of the Bureau of Labor Statistics on the feasibility of collecting job vacancy statistics emphasized this aspect.[2] One conclusion of that study, namely, that it was not feasible at that time to collect job vacancy information by means of mail surveys, was apparently based in large part on the finding that a high proportion of employers did not keep records of job vacancies.

It is not clear that this is a serious difficulty in collecting job vacancy information. Indeed, the existence of job vacancy records of the wrong sort can constitute an obstacle to a successful collection program of job vacancy data. If an employer has a long-established system of preparing reports on unfilled jobs, it is highly unlikely that his definition of an unfilled job will be the same as that requested in a survey. Yet the natural tendency is for the employer to use the existing record system to prepare reports on job vacancies for a collecting agency—even though the data are not those requested in the survey.

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[2] *Gordon Committee Report*, p. 200.

Two means of correcting this fault are available. The first would be to convince the employer that he should change his record-keeping system to conform with the survey definition, as well as with any changes made in that definition over a period of time. This may be difficult to accomplish. The second possibility is that the regularly prepared report, on a different definition basis, can be corrected for the purpose of the survey by a responsible, knowledgeable official. This may also be difficult to obtain, particularly in the case of a mail survey.

In the Rochester survey we found that several employers either instituted a new record-keeping system, in response to our needs, or revised their old system to agree with our definition. The majority, however, did not keep any kind of formal record of job openings.This is particularly true of the smaller employers, which we can designate roughly as those with fewer than 250 employees. For the smallest employers, recall is usually the only method of obtaining information. For most of the medium-sized employers and many of the large employers, job requisition forms are the basic source of information. For the employers who rely upon recall, speed of enumeration, that is, interviewing the employer very shortly after the reference date, is of utmost importance. For those employers who refer to job requisitions, speed is less pressing, but still important.

The number of jobs on requisitions frequently differs from the number of job vacancies. This difference can arise in a number of ways. For example, requisitions may not exist for certain types of jobs, such as high administrative posts or special positions for which workers are not sought through customary channels. In addition, requisitions sometimes exist when workers are not currently being recruited. For example: The employer thinks he has found a worker for a position and has ceased to recruit, at least temporarily; production schedules are being revised and the employment manager has been instructed to discontinue, temporarily, recruiting for a certain position contingent upon the old production schedule; the requisition is for the replacement of a worker who is leaving, and a decision is under consideration as to whether to hire a person at a higher or a lower position than the job to be vacated. The various possibilities for differences point up the importance of having a knowledgeable, responsible person review the requisitions shortly after the survey date in order to prepare job vacancy information for a survey.

Much of the preceding can be summarized by the following observations. A large interviewing staff is necessary so that interviews can be completed very shortly after the survey date. Where feasible, an appointment should be made with employers in order that the interview be conducted in a reasonably leisurely fashion, and to ensure that the employer has an opportunity to assemble the information necessary for the interview in advance.

A quality check was made after the January pretest, as described elsewhere in this report. The quality check revealed certain response variation, which was a composite of response and other types of error. It is unlikely, of course, that the response error constitutes the total response variation, which can result from various causes. It is impressive, therefore, that in no case did the number of job vacancies change as a result of reinterview. While some occupational titles were changed, these changes took the form of more precise titles of jobs rather than changes to different job titles.

F. CHECKING OF REPORTS

As the survey reports were inspected, coded, and processed, a series of checks were possible. For the February reports, it was possible to compare the employment figures for the preceding June, received from the Division of Employment of the New York State Department of Labor, with those obtained from employers. While these could differ for a number of reasons, including seasonal changes and growth or decline of firms, we were still able to detect certain discrepancies and to obtain corrections. A frequent correction was in the identity of the employer. Throughout our surveys we experienced difficulty with interlocking firms. This is, of course, a problem in all data collection from employers. One individual may own or control several small businesses, and may report these on a combined basis to the Division of Employment. In conducting a vacancy survey, it is of utmost importance that the coverage be consistent from survey to survey. One means of obtaining this consistency is to determine exactly what establishments or organizations are included at the time of the first survey.

Another type of check which we used consistently throughout our surveys was to inspect each report form for reasonableness. The number of vacancies, number of employees, education and experience required, sex of employee, and the industry of each employer were considered to see if they seemed reasonable. This check is closely tied with a second group of checks which might be grouped under the heading of internal consistency. Here the number of vacancies was compared with the total employment, and the occupation title was compared with the education, experience, and sex requirements, as well as with the industry of the employer. Many discrepancies were discovered in this way, errors in transcription as well as faulty reporting by employers; they were corrected by contacting the employer, in most cases.

The interviewers were instructed to write notes on the back of the survey form whenever they encountered a situation that seemed unusual or strange to them. These notes were a valuable source of information. We used them to help in interpreting the reasonableness and consistency of survey reports and also to decide whether or not to contact employers. In many cases, they led us to a correction of the report, which we usually obtained by telephone.

Once we had completed the second survey, we were able to compare reports from the two surveys. Changes in employment, total vacancies, job titles, and requirements (education, experience, and sex) were inspected for reasonableness. It is of course difficult to distinguish between normal variation, in the just-mentioned items, and errors. We were able to detect several errors, however, on the basis of such comparisons. Comparisons were made continually until the final tabulations for this report had been completed. These tabulations incorporate all the corrections we were able to make.

In the May survey, we asked each employer who reported a vacancy with a future starting date why the job would not begin until a later time. We asked this question because some people who had reviewed our February results doubted the validity of some of these vacancies. A second result of asking this question was to provide a check on the response accuracy of both these vacancies and others. In many cases, the question led to a discussion between the interviewer and the employer of the definition of a job vacancy.

In the August survey, the number of vacancies that had been open since May or since February was requested of each employer. The collection of this information, and the associated matching of February and May schedules with the August schedules, led to a few corrections of earlier reports. The number of such corrections was small, and their relative importance was not great.

G. SURVEY COVERAGE

The method of selection and the coverage of the sample, as well as our efforts to make this coverage as complete as possible, are described in Appendix C. In this section, the discussion will emphasize errors in coverage that have implications for the accuracy of the survey data.

The major aspect of coverage which we know to be a factor in survey accuracy concerns new firms. It is important that new firms be well-covered in a survey of job vacancies, since they are quite different from firms that have been in existence for some time. In particular, we should expect new firms to have a larger proportion of job vacancies (relative to the number of employees). The comparison is perhaps best drawn between firms recently come into existence and firms that are about to go out of existence. New firms are frequently expanding their employment and for this reason have a relatively large number of vacancies. Firms about to go out of existence are rather unlikely to be hiring new help. If surveys are not continually supplemented with new firms, new employers will become less and less important over time, while employers about to close become relatively more important.

In the February survey, we attempted to contact firms that had been in existence in June, 1964. Many employers had gone out of business in the intervening period. For the May survey, we supplemented the sample by drawing on firms that had come into existence in the intervening 10 months.[3] These 11 new firms had a high proportion of vacancies relative to employment; their vacancy rate was 12.5% in May, compared with 3.2% for all employers. Owing to difficulties of drawing a supplement to the sample in a random manner, we did not supplement the survey composition further for the August survey. This fact undoubtedly resulted in some bias, as may be seen from the fact that four firms closed between May and August, but were not replaced by new firms.

There are two types of employers that were not covered at all in our survey. The first of these are firms created within a very short time of the survey date. The ratio of vacancies to employment should be particularly high for these firms, since they are hiring their first employees We were unable to devise any method of sampling such employers. The second group of firms that were missed altogether are those whose existence lasts only for a short time. These might be called temporary firms. One would expect to find such employers in the construction industry and in special service operations, where firms are founded for a specific job for a very brief period.

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[3] See Appendix C.

The coverage in some chain food stores was incomplete, as mentioned in section C of this chapter.

In general, we can conclude that our surveys generally suffered from undercoverage of new employers and therefore are biased downward in the ratio of vacancies to employment, and are possibly biased in the composition of vacancies. In nearly all cases, however, the bias is among very small firms. We would not, therefore, expect the biases to be numerically important.

H. CLASSIFICATION ERRORS

Classification errors in our survey result principally from three sources. The first is the result of errors in occupational coding. Most of the coding was done by two employees of The Conference Board, who studied occupational coding over a several-month period and became quite proficient in this operation. Each code was checked at least once by direct inspection. In addition, a series of comparisons of reports and codes were made from survey to survey; this resulted in the correction of many errors. The extent of error in occupational classification, using the *Dictionary of Occupational Titles*, is difficult to estimate, but we believe the classification is reasonably accurate. There are limitations to the *Dictionary of Occupational Titles*, of course, which affect the usefulness of the classification.

Another source of classification error is in industrial coding. Initially, the Standard Industrial Classification codes assigned by the Division of Employment, New York State Department of Labor, were used for that portion of the sample obtained from the Division. Because we found it necessary to question many of these codes, interviewers were requested to ask each employer, during the August survey, what was the major product or service of his organization.[4] On the basis of the responses to this question, which were written on the back of the survey form, all industrial coding was checked

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[4] Discrepancies in the industrial coding of the Division of Employment arise mainly from two sources: Tentative codes are assigned to new firms that have not reported their products; annual product statements are received only from employers who file "current employment" reports.

Table 7.1: Changes in Industrial Classification[a]

Change in	Number of Employers (unweighted)	Employment in August, 1965 (weighted)
Major division	7	3,405
First 2 digits of SIC, only	4	1,164
3rd or 4th digit of SIC, only	4	3,986
Total	15	8,555

[a] For description of table, see text.

and a number of classifications questioned. We transmitted the list of firms for which we doubted the accuracy of their codes to the Division of Employment. After checking thoroughly, the Division changed their assignments for 15 employers, about 4% of the "covered" firms in our sample, representing 3% of estimated total employment in August, 1965. The changes in industrial classification are summarized in Table 7.1.

Classification error can also arise from errors in the size of employment or vacancies of consolidated firms. In some cases we obtained only partial coverage of vacancies, or partial coverage of employment, or both.[5] As a result of a series of checks, comparisons, and telephone calls, we believe that we eliminated most of this type of error.

I. COMPILATION ERRORS

Once the reports had been coded and the coding checked, a transcript of the total number of vacancies was made. This hand transcription served to provide a check on machine tabulations. Punch cards were prepared directly from the reporting forms and verified, and a listing of the cards was carefully proofread. After these corrections had been made, a complete new listing of the cards was prepared, together with a first round of tabulations of the data.

The preliminary tabulations were compared with the control totals of number of vacancies and number of employees, by stratum, and discrepancies detected by comparing the reporting forms with the listings. After the totals were reconciled, errors were eliminated, and a new set of tabulations was obtained, the tabulations were inspected for reasonableness; any errors found through this inspection were then eliminated, and a third set of tabulations obtained. Finally, the listings of cards were checked again to pick up obvious errors in key punching, coding, etc. Any additional corrections necessary were made before the final tabulations for this report were prepared.

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[5] If the number of employees is found to be significantly different, on the survey date, from the number used in selecting the sample, the sample design must be altered to avoid giving excessive weight to firms that are much larger than they appeared to be originally. The differences in numbers may arise from classification error or rapid change in size. This problem is particularly acute for small firms with large "blow-up" factors. See the discussion in Chapter 8.

J. RECOMMENDATIONS FOR FUTURE SURVEYS

We can summarize the major conclusions of this review in a few words. The following points omit such obvious matters as care in coding, data processing, and the like:

(1) Initially, data should be collected by personal interview. This serves to clarify definitions, increase the response rate, and reduce the number of false or perfunctory answers. A decision should be made for each employer on changing to mail reports. Periodic visits will probably be necessary even during a continuing mail survey program.

(2) Enumerators need extensive training and supervision to ensure accurate reports in initial interviews. We, therefore, suggest that a relatively small sample be interviewed at first, and the size increased later.

(3) The list from which the sample is drawn is of utmost importance to eliminate errors in coverage and classification. A major effort should be made to obtain and maintain an up-to-date list that contains new firms, accurate industrial coding, and appropriate grouping of multiestablishment organizations.

8.

Sample Design and Accuracy

IN DATA-COLLECTION programs, problems of concept and of nonsampling error often appear more difficult to solve than those of probability sampling. This is true of job vacancies, as it is of several other useful economic statistics. The definition of a job vacancy has aroused much discussion, and there is no general agreement at the present time—the same can be said of the definition of unemployment. In addition, problems of response error and bias in the collection of job vacancy data have loomed so large to a few persons that they are dubious of the value of current surveys. An efficient sample design can aid in the solution of problems of concept and bias by making it possible to collect more and better data at the same cost. These additional data of better quality can then be used to answer questions about concepts or definitions; better and more varied data will also aid in evaluating biases.

Until quite recently, little or no information was available on the variability of job vacancies or on the costs of data collection.[1] Both items are necessary for an efficient sample design. Some technical problems in sample design are discussed in order to justify the procedure for the computation of standard errors. The latter, together with data on interview costs, forms the basis for some suggestions for an efficient sample design.

A. SAMPLING MODEL

An appropriate sampling model is helpful in determining both the total number of employers to be surveyed and the allocation of the total among employers of different size. Such a model is also useful in avoiding erroneous assumptions in variance computation, in understanding the survey data, and in revealing critical points in the data-collection procedure for the detection and elimination of biases. The following model appears to us to be the most helpful for job vacancy surveys.

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[1] The standard errors of the number of unemployed and of the unemployment rate for the entire United States are published in *Employment and Earnings and Monthly Report on the Labor Force* of the Bureau of Labor Statistics.

The sampling element, or object of ultimate interest, is a job, either vacant or filled. The sampling unit, however, is the firm, a cluster of jobs. We consider each job as a trial, which is a success if the job is vacant. The probability of success in a firm, expressed as a percentage, is the vacancy rate of the firm. The vacancy rate varies widely from firm to firm, even when size and industry are held constant. This underscores the importance of the cluster concept, for the correlation between trials, in regard to success or failure, is greater within firms than between firms.[2] Both the probability of success and the number of trials are random variables in a job vacancy survey, in the sense that precise information on either is lacking and estimates derived from the survey must be used.

An alternative model is the binomial model, where all trials within a subpopulation are treated equally, regardless of the firm in which they are found. If the correlation between trials were the same between firms as within firms, this model would be applicable. Further, since the probability of success is a small number, approximately 3%, the Poisson distribution would furnish a close approximation. Use of the Poisson distribution is attractive, for it provides economies through simplification of the computation of standard errors. However, as described in the following section, the evidence from our surveys indicates that both the binomial and the Poisson distributions are inappropriate for job vacancies.

B. COMPUTATION OF STANDARD ERRORS

Our sample is stratified by employment size and industry, nine classifications of each, or 81 strata in all.[3] The samples drawn within each stratum are independent, and estimates made from them can be combined, after appropriate weighting.

The formula for estimating the variance of the total number of job vacancies in a stratum that is appropriate to the sampling model proposed in the preceding section is simply the direct computation of the variance using the number of vacancies, or of successes, in a sample firm, as the observed variable.

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[2] See the discussion in William G. Cochran, *Sampling Techniques*, second edition, John Wiley, New York, 1963, pp. 52, 64-67.

[3] See the description of the sample design in Appendix C.

Let V_{ghi} = the number of vacancies of the *i*th employer in the *gh*th stratum (industry *g* and size[4] *h*), $g=1, 2, \ldots, 9$; $h=1, 2, \ldots, 9$.

n_{gh} = the number of employers in stratum *gh* in the sample.

N_{gh} = the number of employers in stratum *gh* in the population.

$f_{gh} = \dfrac{n_{gh}}{N_{gh}}$ = the sampling fraction in the *gh*th stratum.

Then the variance of the total number of vacancies in the *gh*th stratum is:

(A)

$$\text{var}\left(V_{gh}\right) = N_{gh}\left(N_{gh} - n_{gh}\right) \frac{\sum\limits_{i=1}^{n_{gh}} V_{ghi}^{2} - \dfrac{\left(\sum\limits_{i=1}^{n_{gh}} V_{ghi}\right)^{2}}{n_{gh}}}{n_{gh}\left(n_{gh}-1\right)}$$

Or, equivalently and more conveniently,

(B)

$$\text{var}\left(V_{gh}\right) = \left[\frac{n_{gh}}{f_{gh}}\left(\frac{1}{f_{gh}} - 1\right)\right] \frac{\sum\limits_{i=1}^{n_{gh}} V_{ghi}^{2} - \dfrac{\left(\sum\limits_{i=1}^{n_{gh}} V_{ghi}\right)^{2}}{n_{gh}}}{n_{gh} - 1}$$

The variance of the total number of vacancies in industry *g* is the sum over all sizes of the variances computed with (B).

(C)

$$\text{var}\left(V_{g}\right) = \sum_{h=1}^{9} \text{var}\left(V_{gh}\right)$$

Also, the variance of the total number of vacancies in the entire sample is the sum of the variances of all the strata computed with (B).

(D)

$$\text{var}\left(V\right) = \sum_{g=1}^{9} \sum_{h=1}^{9} \text{var}\left(V_{gh}\right)$$

The standard error of the total number of vacancies is, of course, the square root of the variance.

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[4] "Size" here refers to the number of employees according to the list from which the sample was drawn.

Table 8.1: Estimates of Standard Errors, Total Vacancies in Sample

	Method of Computation			
Survey	Formula (B) (81 Strata) (1)	Binomial (2)	Poisson (3)	Formula (E) (9 Strata) (4)
February	548	332	344	553
May	463	284	299	469
August	542	301	316	553
Average of 3 months	518	306	320	525

Various estimates of the standard errors of the total number of vacancies in the sample are shown in Table 8.1. The figures in column (1) were computed with formula (B) and combined with formula (D).

The estimates computed using the binomial distribution are very close to those computed with the Poisson distribution, columns (2) and (3), but both provide substantial underestimates, averaging only 60% of the direct computations. We assumed that the Poisson distribution was appropriate in our early work and the standard errors shown in the three articles in *The Conference Board Record*[5] were computed using this assumption. A more careful analysis has revealed that this assumption was an unfortunate one.

Eighty-one strata are a good many for a sample of some 400 firms. The computation of standard errors for classifications other than industry would be unduly complex if the entire 81 were used. This complexity would be occasioned by the large number of strata with only one observation in each, requiring a more elaborate computation procedure, and related problems. The figures in column (4) of Table 8.1 were computed from only nine strata, ignoring the industry stratification.

Let V_{hi} = the number of vacancies of the ith employer of size h, ($h = 1, 2, \ldots, 9$; $i = 1, 2, \ldots, n_h$).

n_h = the number of employers of size h.

Also, $f_h = f_{gh}$ in our sample, since we did not vary the sampling fraction by industry. Then the variance of the total number of vacancies of size h is

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[5] The May, September, and November, 1965 issues.

(E)

$$\mathrm{var}\left(V_h\right) = \left[\frac{n_h}{f_h}\left(\frac{1}{f_h} - 1\right)\right] \frac{\sum_{i=1}^{n_h} V_{hi}^2 - \frac{\left(\sum_{i=1}^{n_h} V_{hi}\right)^2}{n_h}}{n_h - 1}$$

These may be combined to obtain an estimate for the entire sample by summing over all sizes, *h*.

The figures in column (4) of Table 8.1 are very close to those in column (1); the greatest difference is in the August figures, but this is only 2% of the more precise figure, computed from the 81 separate strata.[6] The significance of this result is that stratification by industry does not appreciably reduce the over-all variance.[7] This does not mean that stratification by industry is worthless, but it suggests that we will not go far astray if we ignore industry and use only the size strata in computing the standard errors of the estimated number of vacancies according to various classifications, such as occupation. This we have done, as described in the following section, except for the industry classification proper.

C. STANDARD ERRORS FOR THE VARIOUS CLASSIFICATIONS

The computation of standard errors for the various classifications, shown in the tables in Appendix D, are conveniently divided into two groups, classifications according to characteristics of the employers and classifications according to characteristics of the vacancies. Employer characteristics are industry and current employment size; vacancy characteristics are occupation, sex, schooling, experience, and starting date.

Standard errors for major industry groups were computed with formulas (B) and (C). For minor industry groups (two-digit SIC codes, or combinations of those), which are subgroups of the major classifications,[8] the following approach was used. Only the vacancies of those employers in the minor industry group were used in the computation; the vacancies of all other employers within the same major industry group were treated as zero.[9] The rationale for this is that we treat the computation of the variance of subindustry *j* as if we had drawn a sample of the major industry *g* of which *j* is a part, but were only interested in the vacancies in *j* and, therefore, only take them into account. A similar reasoning is used for all the computations of standard errors described in this section.

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[6] Computation of the standard errors of the vacancy *rates* would require much additional calculation. We have not performed these calculations thus far.

[7] We have compared the results according to the two formulas for the 9 sizes in each survey, or 27 comparisons in all, and found them to be of similar magnitude. Two small industries have very large standard errors; this finding is relevant for sample selection; see section E of this chapter.

[8] See Table D.2.

Let V_{ghij} = the number of vacancies of the *i*th employer in minor industry group *j* in stratum *gh* ($i = 1, 2, \ldots, n_{ghj}$).
n_{ghj} = the number of employers in minor industry group *j* in stratum *gh* in the sample.
n_{gh}, f_{gh}, as before.

The variance of the total number of vacancies in minor industry group *j* in the sample is

$$\text{(F)} \quad \operatorname{var}\left(V_j\right) = \sum_{h=1}^{9} \left\{ \left[\frac{n_{gh}}{f_{gh}}\left(\frac{1}{f_{gh}} - 1\right)\right] \frac{\sum_{i=1}^{n_{ghj}} V_{ghij}^2 - \frac{\left(\sum_{i=1}^{n_{ghj}} V_{ghij}\right)^2}{n_{gh}}}{n_{gh} - 1} \right\}$$

For current employment size[10] we could not use the size classification underlying the stratification. Many employers had changed the number of their employees sufficiently to shift them to another size group. Therefore, a given current employment size group includes employers from more than one size stratum. The computation procedure used is as follows: For each of the nine size strata, compute the variance using the vacancies of those employers of current employment size *k;* assign the value of zero as the number of vacancies of those employers, in each size stratum, not in current employment size *k;* ignore the industry stratification.

Let V_{hik} = the number of vacancies of the *i*th employer in current employment size group *k* in size stratum *h* ($i = 1, 2, \ldots, n_{hk}$).
n_{hk} = the number of employers in current employment size group *k* in size stratum *h*.
n_h = the number of employers in size stratum *h*.
f_h = the sampling fraction in the *h*th stratum.

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[9] See Cochran, *op. cit.*, p. 35.

[10] As of the survey date. See Table D.1.

The variance of the total number of vacancies in current employment size group *k* is:

(G)

$$\operatorname{var}\left(V_k\right) = \sum_{h=1}^{9} \left\{ \left[\frac{n_h}{f_h}\left(\frac{1}{f_h} - 1\right)\right] \frac{\sum_{i=1}^{n_{hk}} V_{hik}^{2} - \frac{\left(\sum_{i=1}^{n_{hk}} V_{hik}\right)^2}{n_h}}{n_h - 1} \right\}$$

Finally, the standard errors for all vacancy characteristics were computed in the following manner. The vacancies of each employer were divided into two groups, those with the characteristic in question and those without. Only the first group was used in the computation of the variance. For example, to compute the variance of vacancies requiring a minimum of 12 years of schooling, we determine the number of vacancies with that requirement of each employer, and use these numbers as the variable in our computation. Note the difference between this operation and the preceding one for employer characteristics. Here we are changing the size of the cluster, or the number of jobs of each employer, while previously we were dealing with entire clusters, or all the jobs of an employer.

Let V_{hil} = the number of vacancies that have characteristic *l* of employer *i* in size stratum *h*;

n_h and f_h, as before.

The variance of the number of vacancies with characteristic *l* in the sample is

(H)

$$\operatorname{var}\left(V_l\right) = \sum_{h=1}^{9} \left\{ \left[\frac{n_h}{f_h}\left(\frac{1}{f_h} - 1\right)\right] \frac{\sum_{i=1}^{n_h} V_{hil}^{2} - \frac{\left(\sum_{i=1}^{n_h} V_{hil}\right)^2}{n_h}}{n_h - 1} \right\}$$

D. RELIABILITY OF AGGREGATES AND OF DETAILED CHARACTERISTICS

The size and method of selection of the NICB sample were chosen in order to obtain a reasonably accurate estimate of the total number of job vacancies in Monroe County. This appears to have been accomplished: the largest standard error, 548 for February, is less than 7% of the estimated total (see Table D.1). For many purposes, of course, detailed classifications of vacancies are important, and accurate estimates of the numbers in these categories are required. A comparison of the standard errors with the corresponding estimated number of vacancies in the tables in Appendix D indicates that reasonably accurate results have been obtained for a large number of categories. According to the rule of thumb that a vacancy total greater than three standard errors is sufficiently reliable, all six major occupation groups and more than 50 minor occupation groups pass this rough test. Furthermore, eight education groups and six experience groups are satisfactory by the same criterion.

A few words of caution are in order, however. Excessive reliance should not be placed on the value of a single standard error, since it is also a statistic and itself subject to sampling error. Furthermore, at least 90% of the reported (as distinguished from estimated) vacancies in each of the three surveys were from employers with 250 or more employees. For these employers, the sampling fraction was unity, so the standard error is zero for vacancies reported by them. Detailed classifications, such as certain occupations which are found primarily among small employers, are less likely to be statistically reliable. For instance, vacancies for carpenters and for automobile mechanics and repairmen, together representing 4.5% of total estimated vacancies in February, are small relative to their standard errors. These occupations are frequently found in small establishments. Further, the estimated numbers of vacancies for all firms with current employment size of 0 to 9 are unreliable in February and August, yet represent 14% and 10% of all vacancies, respectively, in those two months. Finally, the nonsampling aspects of survey accuracy, discussed in Chapter 7, may be very important in evaluating a given set of results.

Vacancies reported by small employers with large sampling ratios are the crux of the problem of statistical reliability of detailed classifications. While an efficient sample design for total vacancies, as set forth in the next section, prescribes large sampling ratios for small employers, the results are likely to be unreliable for minor groups. Some of the reasons for this situation have become evident from our study. The first is the rapid growth of some small firms, combined with a sampling list that is out of date. A large sampling ratio, appropriate to an employer of much smaller size than currently found, will often give unreliable values in detailed categories.

A second reason comes from seasonal and other temporal variability. The construction industry furnishes an example. Employment and vacancies in the construction industry fluctuate widely. We have found vacancy rates of 100% or more for small construction firms. A third, related reason is that a small, rapidly growing firm, or one in a seasonal industry, may have a high vacancy rate and all its vacancies in one occupation.

A number of approaches are possible to the problem of unreliable or misleading estimates resulting from large sampling ratios for small employers. None we have found is entirely satisfactory, however. One approach is to restrict the sample to employers with, say, 10 or more employees. This would be simple and economical, but it has the undesirable result that the vacancies obtained are not representative of all vacancies in the labor market under study.

A second alternative, with some of the same disadvantages as the first, is to sample small employers, but to utilize the vacancies reported by them only in estimating aggregates and major classifications and to exclude them in estimating detailed classifications.

A third alternative, which seems to us best, is to try to improve on the system we have used. This can be done by improving sampling lists and keeping them up to date; by increasing the sample size (lowering the sampling ratio) for industries with great seasonality, and by avoiding the use of very high sampling ratios, even when these are indicated for an efficient sample design.

E. SAMPLE SELECTION

Two of the basic considerations in selecting an efficient sample are the variability and interview costs of job vacancies. Estimates of measures of these items are shown in Table 8.2.

Table 8.2: Standard Deviations and Interview Costs of Job Vacancies, by Stratum Size of Employer (Average of Three Surveys)

Stratum Size (Number of Employees)	Standard Deviation S_h	Interview Cost Per Vacancy C_h
1– 7	0.44	$23.40
8– 19	1.47	3.61
20– 49	2.63	2.42
50– 99	5.43	0.72
100–249	4.86	0.74
250 and over	—	0.09

Source: NICB surveys.

The variability measure is the standard deviation of the number of vacancies of employers within a size stratum.[11]

Let V_{hi} = the number of vacancies of the *i*th employer in the *h*th size stratum.

n_h = the number of employers in the *h*th size stratum in the sample.

The variance of job vacancies in size stratum *h* is

(I)

$$S_h^2 = \frac{\sum_{i=1}^{n_h} V_{hi}^2 - \frac{\left(\sum_{i=1}^{n_h} V_{hi}\right)^2}{n_h}}{n_h - 1}$$

We see that both measures vary widely with employment size. The standard deviation is small and the interview cost quite high for the small employers; the former is greater and the latter much smaller for larger employers. Interview costs are determined from man-hours per vacancy obtained; these range from 12 hours for the smallest group of employers down to less than 5 minutes for the largest. The cost and variability estimates were used to compute a revision of our sample design, shown in Table 8.3. The formula used for optimal sample selection is the following, where n_h is the optimal number of firms in stratum *h*, and *n* is the (predetermined) total size of the sample.[12]

(J)

$$n_h = \frac{\frac{N_h S_h}{\sqrt{C_h}}}{\sum_h \left(\frac{N_h S_h}{\sqrt{C_h}}\right)} n$$

We see that a larger fraction of the total sample should be taken from the 50–99-employees group and a smaller fraction from the 1–7-employees group.[13] The suggested sampling fraction for the 50–99 group is doubled, to equal the 100–249 size group, while the sampling fraction for the 1–7 group is reduced drastically.

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[11] Morris H. Hansen, William N. Hurwitz and William G. Madow, *Sample Survey Methods and Theory*, Vol. 1, John Wiley, New York, 1953, pp. 182 and 209.

[12] *Ibid.*, p. 221.

[13] The three smallest strata were combined, because of the small number of reported vacancies, in order to obtain more stable results.

Table 8.3: Original and Revised Samples, by Stratum Size of Employer

Stratum Size (Number of Employees)[a]	Sample Size		Sampling Ratio	
	Used in February	Suggested Revision	Used in February	Suggested Revision
1– 7	80	37	1:99	1:215
8– 19	51	57	1:28	1:25
20– 49	54	57	1:12	1:11
50– 99	41	82	1:6	1:3
100–249	43	36	1:3	1:3
250 and over	120	120	1:1	1:1
Total	389	389		

[a] The strata for zero and for an unknown number of employees are omitted from this table.

The problem of erratic or unstable estimates from small employers with large sampling ratios, discussed in section D, would be worsened by such a change. For this reason, it would appear wise to set a minimum sampling fraction of at least, say, 1/100, to avoid further difficulties from this source. Further, an examination of Table D.2 reveals that the standard errors of two industry groups, "construction" and "public utilities and transportation," are large relative to the estimated totals of vacancies. This results from the relative importance of small employers, particularly "construction" and taxis and trucking in "transportation," combined with high temporal variability of employment in these industries.[14] It appears desirable therefore to increase the sampling fraction for these two groups. In order to avoid proliferating the number of size strata, these industries could simply be shifted up one size class in drawing the sample.

We can summarize our suggestions with regard to sampling variability and sample design in a few points:

(1) Owing to the variation both in standard error and in interview cost by size of employer, we believe that several size strata are needed for an efficient sample. Stratification by industry is desirable to ensure adequate coverage of industry sectors.

(2) The risk of obtaining misleading or erratic results militates against large sampling ratios (and accompanying large "blow-up" factors) for small employers, even though the interview costs per vacancy are high.

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[14] The most important criterion in sample selection may be temporal variability of job vacancies, rather than the size variation of vacancies at a point in time, discussed in this chapter. We plan to do further work on this problem.

(3) Larger samples are warranted for industry groups such as construction that have high temporal variability.

(4) Variances should be computed directly from the data, rather than assuming that a theoretical distribution applies. A computer is well-suited for this operation.

Appendixes

APPENDIX A

Impact of Recent Industrial Changes on Occupational Structure and Level of Employment—A Pilot Survey in the Rochester Area

THE CONFERENCE BOARD started its job vacancy survey in the belief that job vacancy statistics would be useful in the formulation of guidelines for vocational training and related activities. It would therefore be helpful to know which occupations would be expanding or declining over the longer term owing to recent changes in technology, or changes in product or service lines. A supplementary schedule was appended to the job vacancy questionnaire as an experiment to determine whether such information can be readily collected. There was still another purpose to be served: To illustrate how a continuing job vacancy survey could be used to collect additional information in much the same way that the Current Population Survey is used. While this supplementary query was conceived as experimental and illustrative, there seems to be sufficient value in the statistical findings to justify a summary presentation.

1. SURVEY PROCEDURE

Upon the completion of the schedule on job vacancies the interviewer was instructed to ask the following question of the respondent and to check whether the response was *yes* or *no.*

> "Are there any occupations in your operations for which the demand has been changed (i.e., increased or decreased) during the last three months owing to (a) change in product (redesign, new, or discontinued); (b) introduction of new machinery; (c) opening or closing of a department; (d) other *similar* reasons."

For those responding in the affirmative a schedule of information was to be completed. The schedule and instructions to the interviewer are shown as an annex to this appendix. The following information was sought for each occupation:

Reason for change—entered as (a) thru (d) as above and described in words at the bottom of the schedule.

Increase: number of jobs already created;
number of additional jobs you expect to create;
number of persons already added to payroll;
number of additional persons you expect to add.

Decrease: number of jobs already eliminated;
number of additional jobs you expect to eliminate;
number of persons already separated from payroll;
number of additional persons you expect to separate.

To assist the interviewer and respondent to sift the relevant from the irrelevant changes, the interviewers were provided with some background comments. In particular, it was noted that:

> "This form is designed to obtain information on the effects of changes in products, techniques, or machinery on employment. We want to know which occupations are now *more* in demand and which are now *less* in demand as a result of such changes.
>
> "Many firms increase or decrease their work force periodically because their sales increase or decrease. The variations in sales, in turn, can result from a number of factors, such as seasonal influences. Changes in employment resulting from changes in sales or seasonal variations *should not be shown on this form*."

These statements thus advised the interviewer to exclude changes in occupational composition owing to short-term fluctuations in sales traceable to seasonal, cyclical, or random factors, or to growth in established product lines. Even so, this distinction seemed to elude the grasp of those interviewers not on the NICB staff who visited the smaller organizations. Accordingly, the tabulations to be presented are restricted to the schedules obtained from employers with a work force of 250 or more. Our review of the replies by the smaller organizations suggests, however, that the incidence of a relevant change during the survey period among organizations with less than 250 employees was rare indeed.

A query of this sort is concerned with fine distinctions and with economic concepts of considerable complexity. Our experience in the Rochester area suggests to us that personal interviews by a well-trained staff with training in economics is required in order to have the respondent understand the question. Without this understanding, the probability of accurate response is small.

> "The time period for the introduction of changes in product, technique, machinery, etc., is for the three months preceding the interview date. The consequences of the changes (the impacts on employment) can extend into the future. For instance, a new machine can result in changes in personnel which take several months to be fully realized, owing to the time necessary for training, etc."

Thus, affirmative replies deal with events of the recent past along with planned or expected events of the near future. This would seem to provide more solidly based information than replies restricted to anticipations, since these are so often frustrated. Should there be a continuing quarterly survey, this information would become continuously available with an average lag of about one and one half quarters; this should not be a serious delay for program uses designed to adjust to structural changes.

2. SURVEY RESPONDENTS

Since the first job vacancy survey was taken in mid-February and the last in mid-August, the information collected on this schedule covers the nine months from mid-November, 1964, to mid-August, 1965, plus prospective changes beyond the latter date. The number of employers in this subsample of larger organizations varied from 118 to 122, and the number reporting a relevant change varied from 17 to 21. That is, 14% to 18% of these employers carried out a change in method or product in each of the three quarters. Those reporting such a change were above average in size in the first two surveys, but about average in the third survey, size being measured in terms of work force.

When the entire nine months is viewed as a single survey period, there were 41 different employers that initiated relevant changes in at least one quarter. These accounted for about one third of the sample. Of the 41 employers, 14 initiated changes in two quarters and two employers in all three quarters. About three fifths of the 41 employers were classified as manufacturing companies.

3. SIZE OF IMPACT FROM INTRODUCTION OF NEW MACHINERY

Economic conditions in the Rochester area in 1965 and for a year or two before would be regarded as exerting pressure on management to economize on labor. Wage rates had been rising in response to strong demand for labor and to a small and declining number of unemployed. Unfilled jobs, as we have seen, had begun to exceed the number of unemployed, and shortages had begun to appear in some critical occupations. In these conditions one would expect relatively large investments in labor-saving equipment and expansion of operations outside of the Rochester area. Typically, these decisions are not entered into hastily. Nor can the decisions, once taken, be implemented quickly. How much of such changes would be caught in a survey limited to nine months, therefore, is partly happenstance.

Attention is centered first on changes in jobs and employment traceable to introduction of new machinery. In the present context this sort of change would be classified under the popular designation of "automation" or "technological change." How pervasive was this type of change and what impact did it have on the composition of occupations and the number employed?

During the survey period there were 60 manufacturing companies employing 250 or more in the Rochester area (see table on following page). Of this number, 13 different companies, or 22%, introduced new machinery—two of them making two such changes. However, the magnitude of the change, even in absolute terms, was modest indeed. Over the nine months only 69 jobs were actually eliminated, and an additional 93 were expected to be eliminated.[1] The actual number represented 0.4% and the combined actual and expected number, 0.9% of 17,500 persons employed by these 13 firms. When these numbers are related to the employment of all 60 firms, about 100,000, the percentages are truly insignificant. While 162 jobs were scheduled to be eliminated, 130 jobs were to be created as a result of the introduction of the same equipment, and more than one third of these had actually been created.

The excess of jobs to be eliminated over those to be created, 32 in number, is not a measure of technological unemployment although it may be read as a measure of labor-saving in terms of employees. Only 31 persons had actually been separated from the payroll, and another 14 separations were expected, for a total of 45. This is virtually offset by the actual addition to the payroll of 18 employees and the expected addition of another 26, for a total of 44. Thus, despite the elimination of 162 jobs, on balance there was scheduled

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[1] The expected number is the number so reported on each survey date. In the second and third surveys no effort was made to check on the extent to which the expectations reported in previous survey or surveys had been fulfilled.

Summary of Long-term Changes in Jobs and Employment in the Rochester Area, November, 1964—August, 1965

	Manufacturing	Nonmanufacturing	Total
Average no. of employers with 250 or more employees	60	60	120
Average quarterly employment	100,900	55,300	156,200
Introduction of new machinery			
No. of innovations	15	12	27
No. of employers	13	10	23
No. of jobs, actual & expected			
Eliminated	162	33	195
Created	130	60	190
Net change	— 32	+ 27	— 5
No. of employees, actual & expected			
Separated from payroll	45	6	51
Added to payroll	44	25	69
Net change	— 1	+ 19	+ 18
Other changes			
No. of changes	19	17	36
No. of employers	17	12	29
No. of jobs, actual & expected			
Eliminated	231	150	381
Created	589	122	711
Net change	+358	— 28	+330
No. of employees, actual & expected			
Separated from payroll	29	97	126
Added to payroll	412	121	533
Net change	+383	+ 24	+407

Source: NICB surveys.

to be only one less employee on the payroll as a result of the 15 technological changes.

Viewed in terms of gross changes rather than net, 162 jobs were scheduled to be eliminated and 45 employees, holding only one fourth of the affected jobs, dismissed. Thus the remaining 117 employees (162 minus 45) affected by the technological changes were absorbed into other jobs of the 13 companies. Since 44 of the 130 newly created jobs were to be filled by additions to the payrolls of these companies, up to 86 of 117 retained may have been transferred to the newly created jobs. The balance, 31 employees, was absorbed either by filling other jobs vacated through normal turnover or jobs created by expansion in over-all company operations.

Technological changes among the 60 nonmanufacturing companies in the sample were still more modest; ten firms carried out 12 changes. These changes had caused the actual elimination of only one job and the expected elimination of 32 more. Jobs to be eliminated accounted for less than 0.2% of the nearly 17,000 persons employed by the ten companies.

These technological changes, however, actually resulted in the expansion of jobs. Thus, 27 jobs had already been created and 33 additional ones scheduled, making a net gain of 27 jobs. As a result, no one had yet been separated from the payroll, and only six separations were anticipated. On the other hand, 16 new hires had actually been made and another nine were scheduled. This allowed ample scope for the absorption of those whose jobs were to be eliminated.

By way of summary, for the 120 employers in the Rochester area with a work force of 250 persons or more, the following points may be made:

(1) There were 27 instances of technological changes introduced by 23 employers during the nine months between mid-November, 1964, and mid-August, 1965. This was a period when economic conditions in the area and the nation would have created strong economic inducements for labor-saving innovations.

(2) The number of jobs affected by these 27 instances of technological change was minuscule—195 jobs were scheduled to be eliminated and 190 created. The average quarterly employment of the 120 organizations was 156,200.

(3) The number of persons actually separated from the payroll at the time the data were collected was 31, and an additional 20 persons were scheduled to be separated.

(4) As a result of these changes, 34 persons had actually been added to the payroll and another 35 were expected to be added. Thus, new hires, actual and expected, exceeded dismissals, actual and expected, by 18. And this was true in all except 4 of the 27 changes. How many of those separated from one payroll were added to the payroll of another company was not determined.

(5) About three fourths of those employed at jobs that were to be eliminated were shifted to other jobs in the same company.

(6) It is clear that in this particular nine-month period the incidence of technological unemployment was low and the adjustment process for those affected was a relatively easy one. This happy outcome is traceable to two major considerations. The technological changes directly resulted in a net expansion of jobs. It was in the employers' interest to retain and retrain as many as possible of those

whose jobs disappeared because of the existing tight labor market. A heightened sense of social responsibility also contributed to this result.

(7) How typical this particular nine-months' experience with technological change has been for the Rochester area has not been determined. Even less certain is how representative the Rochester experience is of that in other labor markets. However, Rochester's recent experience is consistent with the proposition that technological innovations, when they are introduced in the course of a strong business expansion, place only a minuscule burden on the employees, even during the transition. Over the longer term these changes lead to the creation of a net addition of employment opportunities.

4. SIZE OF IMPACT: OTHER CHANGES

"Other changes" refers to long-term occupational changes stemming from changes in product line or service which can occur with or without the opening or closing of a department. This type of change affected somewhat more employers and jobs than did the introduction of new equipment; 36 changes were reported by 29 employers. Again, there was a somewhat higher incidence of these changes among manufacturing employers than among nonmanufacturing employers.

The number of jobs actually eliminated and expected to be eliminated amounted to 381, or one fourth of one percent of the work force of the 120 employers in the sample. About three fifths of the jobs eliminated were in manufacturing establishments. However, the number of jobs created, actual and expected, numbered 711, making a net addition of 330 jobs. About four fifths of the new jobs originated in manufacturing.

As in the case of technological innovations, there was much less change in terms of employed persons than in jobs. Although 381 jobs were scheduled to be eliminated, only 126 employees, or about one third of the jobs, were scheduled to be separated by employers. Thus, 255 persons who had occupied eliminated jobs were to be retained, and an additional 533 persons were to be engaged as new hires. The longer-term changes that could affect occupational composition were definitely expansionary in the survey period, but on a modest scale. In only six of the 36 changes did the number of separations exceed new hires. This factor, in addition to the existence of a tight labor market, has minimized the hardships of those caught up in the adjustment process.

5. INSIGHT INTO OCCUPATIONAL CHANGES

The changes reported in our survey are too few and too disparate in occupational grouping to provide any new insights into impending occupational changes of a significant character. To the extent that there is some occupational concentration, on the expansion side it is centered in the occupations required to man data processing systems and technicians to operate the newer electronic devices in hospitals. On the contraction side, the only concentration was the continued elimination of jobs for payroll clerks. The latter serves as a reminder that it is shortsighted to say technological displacement occurs solely among production workers.

Cumulative evidence of this character over a longer period, however, should be more informative as to trends. Equally instructive should be interarea comparisons of similar data. The more far-reaching innovations may originate in one labor area and only gradually spread to a particular one. We believe the results of our own pilot effort encourage additional experimental efforts to devise means of learning of significant occupational shifts quickly.

May 7, 1965

Instructions for Completing "Supplementary Inquiry on Occupational Change"

A. General instructions

1. This form is designed to obtain information on the effects of changes in products, techniques, or machinery on employment. We want to know which occupations are now more in demand and which are now less in demand as a result of such changes.
2. Many firms increase or decrease their work force periodically because their sales increase or decrease. The variations in sales, in turn, can result from a number of factors, such as seasonal influences. Changes in employment resulting from changes in sales or seasonal variations should not be shown on this form.

B. Specific instructions

1. Describe the "Reason for Change," coded in Column II, at the bottom of the form.
2. For "yes" answers, show only one occupation (job title) on each line. Also, do not show increases and decreases on the same line.
3. The time period for the introduction of changes in product, technique, machinery, etc., is from Feb. 15 to the present. The consequences of the changes (the impacts on employment) can extend into the future. For instance, a new machine can result in changes in personnel which take several months to be fully realized, owing to the time necessary for training, etc.

National Industrial Conference Board
845 Third Avenue, New York, New York 10022

Name of employer________________________

Supplementary Inquiry on Occupational Change

Are there any occupations in your operations for which the demand has been changed (i.e. increased or decreased) during the last three months due to (a) change in product (redesign, new, or discontinued); (b) introduction of new machinery; (c) opening or closing of a department; (d) other similar reasons.

_____ Yes _____ No (Please check one.)

If answer is "yes," please complete schedule below:

		As result of developments since May 15, 1965							
		INCREASE				DECREASE			
Occupation Affected	Reason for Change*	No. of jobs already created	No. of additional jobs you expect to create	No. of persons already added to payroll	No. of additional persons you expect to add	No. of jobs already eliminated	No. of additional jobs you expect to eliminate	No. of persons already separated from payroll	No. of additional persons you expect to separate
I	II	III	IV	V	VI	VII	VIII	IX	X
1.									
2.									
3.									

* Use letters (a) thru (d) to correspond with reasons noted above. Please describe reason here.

________________ ______
Initials of interviewer date

APPENDIX B

Letter to Employers, Instructions, and Reporting Forms

Letter to Employers

August 6, 1965

In the latter half of August, 1965, the National Industrial Conference Board will conduct the last of a series of three surveys of job vacancies in Monroe County. This will complete the data-collecting phase of an exploratory study undertaken with financial support from the Ford Foundation.

As one of the employers who kindly cooperated with us in the May survey, we have recently mailed to you a preliminary report describing some of our findings. We shall do so again following the August survey. This letter is to ask your help in this final survey.

Information Requested

An interviewer will call on you either during the week of August 16 or August 23 to ask for survey information, which the interviewer will enter on a schedule. The following items are requested:

1. A list of job openings that were unfilled on August 13 (the reference date) despite active efforts to fill the job with persons from outside your organization. This should cover all branches of activity such as top management, clerical, sales, research, etc., in addition to production workers.
2. For each unfilled job we would like to know
   (a) the occupational title and number of persons sought
   (b) sex
   (c) minimum years of schooling acceptable
   (d) minimum years of related experience acceptable
   (e) earliest starting date—now or, if not now, the date

3. Total number of persons employed by your organization on August 13 or the nearest date practical.

For the purposes of this survey, job vacancies are unfilled job openings, present and anticipated, for which you are actively recruiting employees from outside your organization, as of August 13. They include full-time, part-time, permanent, and temporary job openings.

If you could arrange to assemble this information in advance of the interviewer's visit, it would save your time as well as his. The interviewer will be a member of The Conference Board staff.

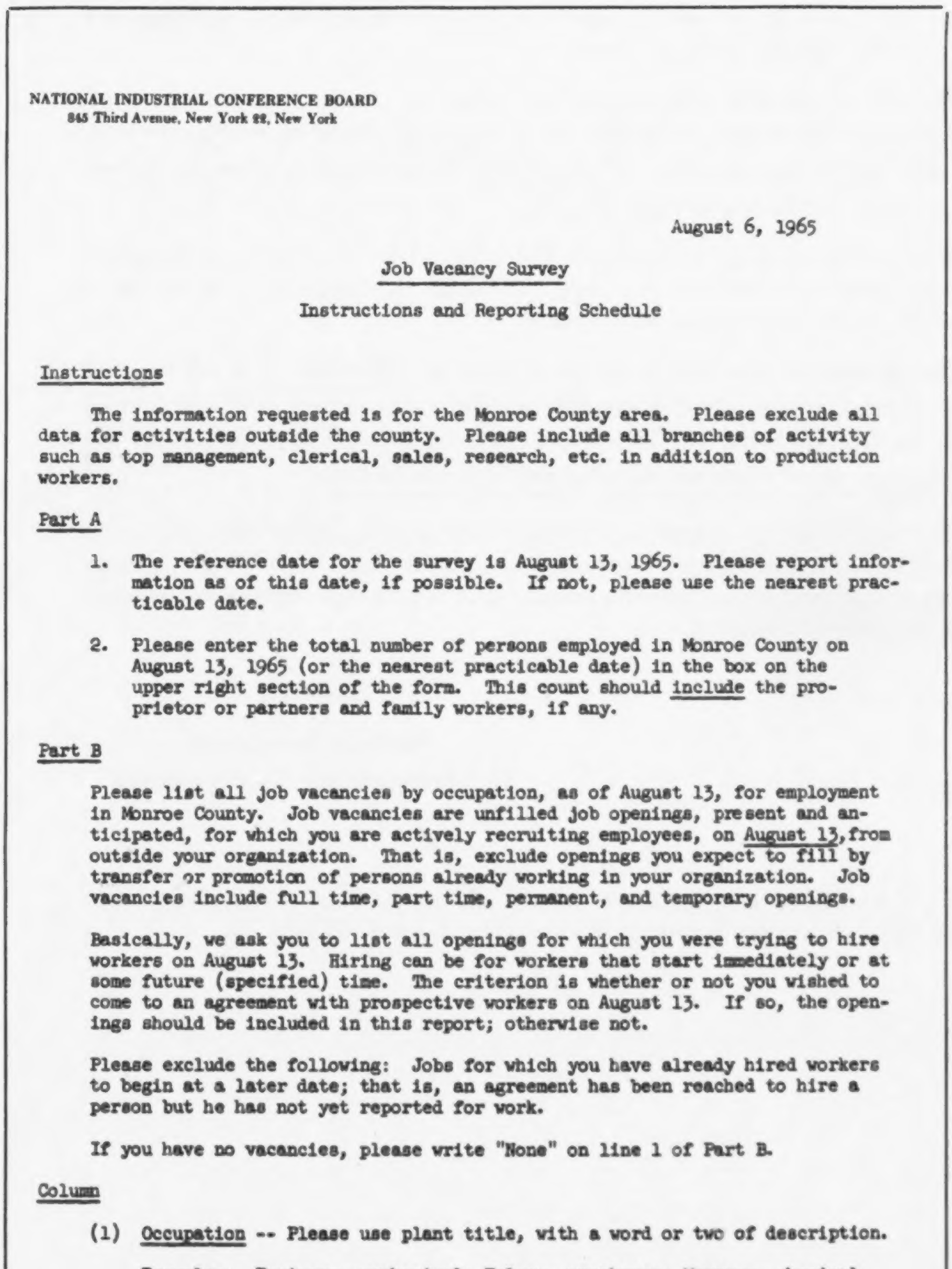
The information you supply will be treated as confidential and will be used only in combination with the several hundred other reports. The activities of any one firm will in no way be revealed. Never in its 50 year history has The Conference Board violated this pledge of confidentiality.

The success of this project is dependent upon your cooperation. To assure scientific results, your answers are needed whether your establishment is large or small and even if you have no vacancies to report. Your voluntary response will be much appreciated.

Sincerely,

Martin R. Gainsbrugh
Vice President and Chief Economist

P.S. If you have any questions, please do not hesitate to telephone us in care of the Rochester Industrial Management Council, 325-5133.



NATIONAL INDUSTRIAL CONFERENCE BOARD
845 Third Avenue, New York 22, New York

August 6, 1965

Job Vacancy Survey

Instructions and Reporting Schedule

Instructions

The information requested is for the Monroe County area. Please exclude all data for activities outside the county. Please include all branches of activity such as top management, clerical, sales, research, etc. in addition to production workers.

Part A

1. The reference date for the survey is August 13, 1965. Please report information as of this date, if possible. If not, please use the nearest practicable date.

2. Please enter the total number of persons employed in Monroe County on August 13, 1965 (or the nearest practicable date) in the box on the upper right section of the form. This count should include the proprietor or partners and family workers, if any.

Part B

Please list all job vacancies by occupation, as of August 13, for employment in Monroe County. Job vacancies are unfilled job openings, present and anticipated, for which you are actively recruiting employees, on August 13, from outside your organization. That is, exclude openings you expect to fill by transfer or promotion of persons already working in your organization. Job vacancies include full time, part time, permanent, and temporary openings.

Basically, we ask you to list all openings for which you were trying to hire workers on August 13. Hiring can be for workers that start immediately or at some future (specified) time. The criterion is whether or not you wished to come to an agreement with prospective workers on August 13. If so, the openings should be included in this report; otherwise not.

Please exclude the following: Jobs for which you have already hired workers to begin at a later date; that is, an agreement has been reached to hire a person but he has not yet reported for work.

If you have no vacancies, please write "None" on line 1 of Part B.

Column

(1) Occupation -- Please use plant title, with a word or two of description.

Examples: Engineer--mechanical; Helper--warehouse; Manager--chemical research laboratory; Operator--turret lathe; Trainee--sales.

(2) Number Sought -- The total number of workers you are seeking for this occupation.

(3) Sex -- Please enter "M" if a male worker is sought, "F" if a female worker is sought, or "O" if the position is for persons of either sex.

(4) School Years -- Please enter the absolute minimum of formal education you will accept (not the preferred level, if higher). Enter as follows:

None	0
Literate	4
Grammar school graduate	8
Some high school	10
High school graduate	12
Junior college, Associate degree	14
College graduate	16
Master's degree	18
Ph.D.	20

(5) Related Experience -- Please enter the absolute minimum number of years of related experience you will accept (not the preferred number, if higher). This qualification is in addition to school years. Enter as follows:

No experience required	0
Experience required:	
3 months or less	A
4 to 6 months	B
7 to 9 months	C
10 or 11 months	D

If 12 months or more, enter number of years -- 1, 2, 3, etc.

(6) and (7) Earliest Starting Date -- If you are willing for an employee to begin work on August 13, please check column (6). If the vacancy is for a later time, please enter the date (month and day, such as 9/1 in (7)). Note: If there are several workers sought for one title and the starting dates differ, please show each date on a separate line and indicate the number of openings involved.

(8) and (9) Number Open Since Feb., May -- On this final survey, we ask you to identify which of your present vacancies (as of August 13) have been open since February, in column (8), or since May, in column (9). For example, if you had 5 vacancies for "Typist" on August 13, of which 2 of the 5 are open since February and 3 of the 5 since May, please show "2" in column (8) and "3" in column (9). By "open since February," or May, is meant vacancies which you have not successfully filled in the intervening period. The vacancies open since February are, of course, also included in those open since May.

NATIONAL INDUSTRIAL CONFERENCE BOARD
845 Third Avenue, New York, N. Y. 10022

Name, address, and telephone of employer:

Name of person responsible for completion of form ____________________

Interviewers Initials ________ **Date** ________________

1. Unfilled job vacancies as of __________

2. Total number of employees ☐

B.			Job Requirements Minimum Acceptable		Earliest Starting Date		Number Open Since		Please leave this column blank
Occupation	No. Sought	Sex	School Years	Related Experience	Now	Date	Feb.	May	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1									
2									
3									
4									
5									
6									
7									
8									
9									

APPENDIX C

Selection of the Sample for the Job Vacancy Survey

THE SAMPLE comprises two main divisions. The first and most important is drawn from the population of "covered" employers, those paying New York State unemployment insurance payroll tax during the second quarter of 1964. The second includes nonprofit institutions, government at all levels, small employers, and others not covered by the New York State Unemployment Insurance Law.

1. SAMPLE DESIGN

The basic sample design is a sample stratified by employment size and major industry division. We attempted to approximate optimum sampling, assuming that vacancies were distributed with a Poisson distribution and that they represented about the same proportion of total jobs for all sizes of employer. Little information on the variation in number of vacancies by size of employer was available at the time of designing the sample. We obtained some preliminary figures from the survey of job vacancies in Buffalo, New York, which indicated that the ratio of vacancies to employment was highest for the smallest firms. An allowance for this pattern was incorporated in our sample design.

The best available information we found on the population of establishments in Monroe County was in *County Business Patterns.*[1] This publication presents the number of firms by employment size for eight size classes. From data found in this publication, we estimated the distribution of an optimum sample of 300 establishments. This distribution and the related sampling ratios were then adjusted in accordance with the information previously mentioned from the Buffalo survey indicating a higher ratio of vacancies to employment for the smaller firms. The final sampling ratios follow:

---

[1] U. S. Census Bureau, *County Business Patterns: First Quarter 1962*, Part 3A, Middle Atlantic States (New Jersey, New York), 1963, pp. 157-162.

Stratum	Base Employment Size	Sampling Ratio
1	0	1:100
2	1—3	1:142
3	4—7	1:52
4	8—19	1:28
5	20—49	1:12
6	50—99	1:6
7	100—249	1:3
8	250 and over	1:1

2. SAMPLE OF COVERED EMPLOYERS

The basic population of covered employers is available on tape in the computer records sections of the New York State Division of Employment. The registration code, geographic area, size of employment in each month of the quarter, name and address of the firm, as well as certain data on payrolls, are available for each employer. The Division agreed to draw a systematic sample for us. We asked them to sample separately in each of the following eight industry divisions:

Industry Group	SIC Codes
1. Contract construction	15—17
2. Ordnance and durable manufacturing	19, 24, 25, 32—39
3. Nondurable manufacturing	20—23, 26—31
4. Transportation and public utilities	40—49
5. Wholesale trade	50
6. Retail trade	52—59
7. Finance, insurance, and real estate	60—67
8. Services (not including medical, legal, and educational)	70—79

Within each industry group the following sampling ratios were used:

Employment Size	Sampling Ratio
0	1:50
1—3	1:71
4—7	1:26
8—19	1:14
20—49	1:8
50 and over	1:1

The sampling ratios are greater than those indicated in the section on sample design. We subsequently made a systematic selection from the sample drawn by the Division of Employment. The purpose of the oversampling was to furnish additional firms to use as replacements in later surveys, to allow for nonresponse, pretesting, etc. In addition to the eight industry divisions listed above, we obtained complete listings of all covered establishments in the following divisions:

Industry Group	SIC Codes
1. Agricultural services, forestry, fisheries	01—09
2. Mining	10—14
3. Selected services (medical, legal, educational, nonprofit membership, miscellaneous)	80—89
4. Nonclassifiable	99

The purpose of this procedure was to permit more intensive study of the characteristics of covered establishments in these industries. Scrutiny of the agricultural services and mining industries indicated that no special treatment was needed, so we proceeded to apply the standard sampling ratios to the lists of covered establishments provided. For selected services, SIC 80-89, a more elaborate procedure was followed. The first step was to draw a systematic sample within the classification, with the standard sampling ratios. The additional steps are described in section 3.

3. SAMPLE OF EMPLOYERS NOT COVERED BY NEW YORK STATE UNEMPLOYMENT INSURANCE

For sampling purposes noncovered establishments were divided into four groups: independent professional persons, nonprofit institutions, government, and public schools.

(a) *Independent professional persons.* We began with the Yellow Pages of the Rochester telephone directory. The listing of covered professionals provided by the Division of Employment was used to delete those professionals that were "covered." Once the list in the Yellow Pages had been screened in this way, a systematic sample was drawn of all professional workers, using the sampling ratio 1:142.

(b) *Nonprofit organizations.* The first step was to consult an official of the New York State Division of Employment who advised us of the types of institutions that might not be covered by New York State unemployment insurance. (The final decision on any institution is subject to adjudication.) The Yellow Pages of the Rochester telephone book were then consulted for voluntary organizations, churches, and private schools. The list of covered establishments provided by the Division of Employment was used to delete those already accounted for by the covered sample. The resulting list was supplemented from several sources: a list of nonprofit organizations provided by the Council of Social Agencies of Rochester; a directory of hospitals in the county available in the Journal of the American Hospital Association: a list of Roman Catholic parochial schools obtained from the Diocese of Rochester; and a list of secondary schools and colleges provided by an official of the Rochester office of the New York State Division of Employment.

The resulting final list was divided into two components. The first included those institutions or establishments for which we had some information on number of employees. A systematic sample was drawn from this list, using the customary sampling ratios. The second list covered institutions and establishments for which we had no employment information. A systematic sample was drawn from this list using the constant sampling rate of 1:50.

(c) *Government—Federal, state, and local.* A list of Federal, state, and local government units was assembled from a variety of sources: a list provided by the Rochester office of the New York State Division of Employment; the Rochester telephone book; information obtained from offices of the city of Rochester and of Monroe County; the Civil Service Commission of Monroe County; a list of state and Federal establishments provided by the Community Chest of Rochester; and a list of state establishments provided by the New York State Civil Service Commission. The complete list was separated into two components, employment size known and employment size unknown. The regular sampling ratios were applied to the first component, while the fixed sampling ratio of 1:50 was used for the second component.

(d) *Public schools.* Information on the public school systems in Monroe County, their organization, employment size, etc., was obtained from a publication of the New York State Education Department.[2] Additional information was provided by the offices of the two district school superintendents of Monroe County. A systematic sample was drawn of administrative units of public schools in the county from a list compiled from the sources mentioned above.

4. SUPPLEMENTING THE SAMPLE

In order to reduce the bias resulting from "aging" of the sample, we drew a supplement of new firms between the February and May surveys.[3]

We classified the 11 employers reported "out of business" in our February survey by major industry group. We then drew a systematic sample of 11 employers, stratified by industry, from a list of employers covered by New York State unemployment insurance that had come into existence since the second quarter of 1964. No information on the employment size of these new firms was available. They were therefore placed in the stratum of employers with employment size unknown.

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[2] Bureau of Statistical Services, State Education Department, The University of the State of New York, *School Districts, Enrollment, Staff, and School Housing*, March, 1964 (processed).

[3] See section G of Chapter 7.

APPENDIX D

Detailed Statistical Tables

Explanatory Notes

(1) Tables D.1 to D.15 have three parts each—for the February, May, and August surveys. The exact reference dates are February 12, 1965; May 14, 1965; and August 13, 1965, respectively.

(2) The source for all tables in this appendix is the NICB surveys.

(3) Data in all tables relate to Monroe County, New York.

(4) The estimated number of job vacancies is shown in every table regardless of statistical reliability. If the total number of vacancies in a classification (for example, an occupation group) does not exceed three standard errors of that classification, the total is indicated with footnote (a). The percentage distribution of such a category is not shown except for a few important groups where the criterion is almost met.

(5) Percentage distributions do not necessarily add to total, or totals, owing to rounding.

(6) All standard errors are rounded to three significant digits.

Footnotes

(a) Total for the classification is less than three standard errors.

(b) Per cent distribution not shown because estimated total is less than 60.

(c) Statistically unreliable. A standard error was not computed for this classification. However, the total for the larger classification of which this is a subgroup is less than three standard errors.

(d) Less than 0.05%.

(e) Only those occupations are shown for which the number of vacancies is reasonably large relative to the corresponding standard error. The number of vacancies in specific occupations does not, therefore, add to the group totals.

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Table D. 1: February, Employment Size

Job Vacancies, Number of Employers, and Total Employment, by Employment Size

Employment Size	Number of Employers Interviewed	Estimated			Standard Error of Number of Vacancies	Vacancy Rate (V as Per Cent of E+V)	Per Cent Distribution of Vacancies, by Employment Size
		Number of Employers	Employment (E)	Number of Vacancies (V)			
0— 9	110	9,358	29,622	1,126[a]	415	3.66	14.2
10— 19	41	1,092	14,536	420	122	2.81	5.3
20— 49	50	698	19,580	722	185	3.56	9.1
50— 99	37	226	15,610	672[a]	290	4.13	8.5
100— 249	46	153	21,816	627	157	2.79	7.9
250— 999	83	87	43,478	1,273	17.1	2.84	16.0
1,000—2,499	19	19	28,927	591	0	2.00	7.4
2,500 and over..................	13	13	81,637	2,516	0	2.99	31.7
Total, Monroe County........	399	11,646	255,206	7,947	548	3.02	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 1: May, Employment Size

Job Vacancies, Number of Employers, and Total Employment, by Employment Size

Employment Size	Number of Employers Interviewed	Estimated Number of Employers	Estimated Employment (E)	Estimated Number of Vacancies (V)	Standard Error of Number of Vacancies	Vacancy Rate (V as Per Cent of E+V)	Per Cent Distribution of Vacancies, by Employment Size
0— 9	114	9,466	31,464	784	246	2.43	8.9
10— 19	42	1,210	16,780	786	198	4.47	9.0
20— 49	49	677	19,607	1,172	288	5.64	13.4
50— 99	40	303	20,598	834	195	3.89	9.5
100— 249	51	189	26,994	701	184	2.53	8.0
250— 999	85	89	45,714	1,420	79.2	3.01	16.2
1,000—2,499	16	16	25,012	643	0	2.51	7.3
2,500 and over	13	13	82,723	2,436	0	2.86	27.8
Total, Monroe County	410	11,963	268,892	8,776	463	3.16	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 1: August, Employment Size

Job Vacancies, Number of Employers, and Total Employment, by Employment Size

Employment Size	Number of Employers Interviewed	Estimated			Standard Error of Number of Vacancies	Vacancy Rate (V as Per Cent of E+V)	Per Cent Distribution of Vacancies, by Employment Size
		Number of Employers	Employment (E)	Number of Vacancies (V)			
0— 9	112	9,296	31,840	890[a]	349	2.72	10.4
10— 19	39	1,158	16,806	848[a]	322	4.80	9.9
20— 49	51	700	21,204	884	246	4.00	10.3
50— 99	35	297	20,227	707	138	3.38	8.3
100— 249	52	185	27,308	853	167	3.03	10.0
250— 999	84	90	45,067	1,016	37.1	2.20	11.9
1,000—2,499	18	18	26,580	824	0	3.01	9.6
2,500 and over	14	14	89,551	2,546	0	2.76	29.7
Total, Monroe County	405	11,758	278,583	8,568	542	2.98	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 2: February, Industry

Job Vacancies, Number of Employers, and Total Employment, by Industry Group

Industry Group	Number of Employers Interviewed	Estimated			Standard Error of Number of Vacancies	Vacancy Rate (V as Per Cent of E+V)	Per Cent Distribution of Vacancies, by Industry Group
		Number of Employers	Employment (E)	Number of Vacancies (V)			
Durable manufacturing	69	499	96,142	2,590	173.0	2.62	32.6
Fabricated metal products	9	62	4,664	120[a]	58.8	2.51	1.5
Machinery (except electrical)	15	80	11,324	462	142.0	3.92	5.8
Electrical machinery	8	64	12,263	103	4.9	0.84	1.3
Photographic, optical, and instruments	19	186	54,003	1,595	36.6	2.87	20.1
Other durable goods	18	107	13,888	310[a]	115.0	2.18	3.9
Nondurable manufacturing	47	682	24,544	431	22.6	1.73	5.4
Food products	18	171	7,253	81	14.9	1.10	1.0
Apparel	8	160	8,678	253	0	2.83	3.2
Printing and publishing	9	219	4,396	33[a]	11.5	0.75	0.4
Other nondurable goods	12	132	4,217	64	18.7	1.49	0.8
Construction	28	1,323	11,392	850[a]	329.0	6.94	10.7
Public utilities and transportation	14	377	9,579	408[a]	284.0	4.09	5.1
Trade, retail and wholesale	106	3,869	42,490	1,004	223.0	2.31	12.6
Retail trade, general merchandise	13	289	9,693	97	17.1	0.99	1.2
Auto dealers and service stations	15	635	5,038	419[a]	199.0	7.68	5.3
Retail trade, eating and drinking	21	1,114	6,004	148[a]	68.1	2.41	1.9
Other trade	57	1,831	21,755	340	98.4	1.54	4.3
Finance, insurance, and real estate	22	748	9,823	294	54.8	2.91	3.7
Banking	5	146	3,329	52	0	1.54	0.7
Insurance carriers	5	39	1,973	110	9.8	5.28	1.4
Other	12	563	4,521	132[a]	53.9	2.84	1.7
Services	98	3,929	48,512	2,030	168.0	4.02	25.5
Personal	13	543	4,457	130[a]	50.6	2.83	1.6
Medical and health	20	1,434	10,650	328	11.0	2.99	4.1
Education	28	162	20,340	1,320	36.4	6.09	16.6
Other services	37	1,790	13,065	252[a]	153.0	1.89	3.2
Government	15	219	12,724	340	43.9	2.60	4.3
Federal	5	48	2,953	31	0	1.04	0.4
State	3	144	3,997	133	0	3.22	1.7
Local	7	27	5,774	176	43.9	2.96	2.2
Total, Monroe County	399	11,646	255,206	7,947	548.0	3.02	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 2: May, Industry

Job Vacancies, Number of Employers, and Total Employment, by Industry Group

Industry Group	Number of Employers Interviewed	Estimated			Standard Error of Number of Vacancies	Vacancy Rate (V as Per Cent of E+V)	Per Cent Distribution of Vacancies, by Industry Group
		Number of Employers	Employment (E)	Number of Vacancies (V)			
Durable manufacturing	72	605	97,894	3,418	248.00	3.37	38.9
Fabricated metal products	9	62	4,479	121	39.40	2.69	1.4
Machinery (except electrical)	16	130	11,282	730	216.00	6.08	8.3
Electrical machinery	9	114	12,071	283	52.40	2.29	3.2
Photographic, optical, and instruments	19	186	55,108	1,954	12.50	3.42	22.3
Other durable goods	19	113	14,954	330[a]	179.00	2.16	3.8
Nondurable manufacturing	48	685	26,044	804	129.00	2.99	9.2
Food products	18	171	7,510	457	133.00	5.74	5.2
Apparel	8	160	9,292	195	11.50	2.06	2.2
Printing and publishing	9	219	4,647	45	11.50	0.96	0.5
Other nondurable goods	13	135	4,595	107	30.60	2.28	1.2
Construction	31	1,381	16,070	836	241.00	4.94	9.5
Public utilities and transportation	14	377	9,715	257	73.30	2.58	2.9
Trade, retail and wholesale	108	3,919	44,192	1,296	223.00	2.85	14.8
Retail trade, general merchandise	13	289	8,946	266	36.60	2.89	3.0
Auto dealers and service stations	14	535	4,760	245[a]	109.00	4.90	2.8
Retail trade, eating and drinking	21	1,114	6,805	316[a]	144.00	4.44	3.6
Other trade	60	1,981	23,681	469	156.00	1.94	5.3
Finance, insurance, and real estate	22	748	9,475	224	68.40	2.31	2.6
Banking	5	146	3,358	73	0	2.13	0.8
Insurance carriers	5	39	1,927	120[a]	62.80	5.86	1.4
Other	12	563	4,190	31[a]	27.60	0.73	0.4
Services	100	4,029	52,758	1,579	127.00	2.91	18.0
Personal	13	543	4,685	60[a]	27.30	1.26	0.7
Medical and health	21	1,484	10,856	407	74.40	3.61	4.6
Education	28	162	20,192	723	15.90	3.46	8.2
Other services	38	1,840	17,025	389	118.00	2.23	4.4
Government	15	219	12,744	362	36.40	2.76	4.1
Federal	5	48	2,928	118[a]	55.70	3.87	1.3
State	3	144	4,084	153	0	3.61	1.7
Local	7	27	5,732	91[a]	38.30	1.56	1.0
Total, Monroe County	410	11,963	268,892	8,776	463.00	3.16	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 2: August, Industry

Job Vacancies, Number of Employers, and Total Employment, by Industry Group

Industry Group	Number of Employers Interviewed	Estimated Number of Employers	Estimated Employment (E)	Estimated Number of Vacancies (V)	Standard Error of Number of Vacancies	Vacancy Rate (V as Per Cent of E+V)	Per Cent Distribution of Vacancies, by Industry Group
Durable manufacturing	70	598	101,567	3,516	281.0	3.35	41.0
Fabricated metal products	9	62	5,211	274	85.8	5.00	3.2
Machinery (except electrical)	16	130	11,398	663[a]	282.0	5.50	7.7
Electrical machinery	9	114	12,007	499	12.2	3.99	5.8
Photographic, optical, and instruments	18	185	58,083	1,867	92.0	3.11	21.8
Other durable goods	18	107	14,868	213	67.3	1.41	2.5
Nondurable manufacturing	46	629	27,119	1,057	136.0	3.75	12.3
Food products	17	143	7,812	496	136.0	5.97	5.8
Apparel	8	160	9,968	307	0	2.99	3.6
Printing and publishing	9	219	4,844	61	18.7	1.24	0.7
Other nondurable goods	12	107	4,495	193	54.6	4.12	2.3
Construction	31	1,381	16,488	816[a]	304.0	4.72	9.5
Public utilities and transportation	14	377	9,880	181[a]	64.7	1.80	2.1
Trade, retail and wholesale	107	3,777	45,710	1,284	228.0	2.73	15.0
Retail trade, general merchandise	13	289	9,240	348	38.9	3.63	4.1
Auto dealers and service stations	13	393	4,544	272[a]	137.0	5.65	3.2
Retail trade, eating and drinking	21	1,114	7,166	232[a]	107.0	3.14	2.7
Other trade	60	1,981	24,760	432	44.1	1.71	5.0
Finance, insurance, and real estate	22	748	10,597	179	39.7	1.66	2.1
Banking	5	146	3,410	68	0	1.96	0.8
Insurance carriers	5	39	1,942	69	21.4	3.43	0.8
Other	12	563	5,245	42[a]	34.8	0.79	0.5
Services	100	4,029	53,232	1,178	205.0	2.17	13.7
Personal	13	543	4,628	93[a]	49.9	1.97	1.1
Medical and health	21	1,484	10,881	426[a]	143.0	3.77	5.0
Education	28	162	20,834	386	12.7	1.82	4.5
Other services	38	1,840	16,889	273[a]	143.0	1.59	3.2
Government	15	219	13,990	357	54.4	2.49	4.2
Federal	5	48	3,014	131[a]	59.4	4.17	1.5
State	3	144	4,507	153	0	3.28	1.8
Local	7	27	6,469	73	6.0	1.12	0.9
Total, Monroe County	405	11,758	278,583	8,568	542.0	2.98	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 3: February, Employment Size and Industry

Job Vacancies, by Employment Size and Industry Group

Industry Group	Employment Size 0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total	Standard Error of Total Number of Vacancies
ESTIMATED NUMBER OF JOB VACANCIES										
Durable manufacturing	0	28	340	180	49	243	53	1,697	2,590	173.0
Nondurable manufacturing	0	12	0	0	72	106	241	0	431	22.6
Construction	408	108	28	276	30	0	0	0	850[a]	329.0
Public utilities and transportation	284	0	24	6	0	5	89	0	408[a]	284.0
Trade, retail and wholesale	264	188	182	78	162	75	38	17	1,004	223.0
Finance, insurance, and real estate	0	56	76	0	102	32	28	0	294	54.8
Services, other than education	142	28	24	78	101	226	111	0	710	158.0
Education, public and private	28	0	48	6	108	474	0	656	1,320	36.4
Government	0	0	0	48	3	112	31	146	340	43.9
Total, Monroe County	1,126[a]	420	722	672[a]	627	1,273	591	2,516	7,947	548.0
Standard error of total	415.0	122.0	185.0	290.0	157.0	17.1	0	0	548.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP										
Durable manufacturing	0	1.1	13.1	6.9	1.9	9.4	2.0	65.5	100.0	
Nondurable manufacturing	0	2.8	0	0	16.7	24.6	55.9	0	100.0	
Construction									(a)	
Public utilities and transportation									(a)	
Trade, retail and wholesale	26.3	18.7	18.1	7.8	16.1	7.5	3.8	1.7	100.0	
Finance, insurance, and real estate	0	19.0	25.9	0	34.7	10.9	9.5	0	100.0	
Services, other than education	20.0	3.9	3.4	11.0	14.2	31.8	15.6	0	100.0	
Education, public and private	2.1	0	3.6	0.5	8.2	35.9	0	49.7	100.0	
Government	0	0	0	14.1	0.9	32.9	9.1	42.9	100.0	
Total	14.2	5.3	9.1	8.5	7.9	16.0	7.4	31.7	100.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY SIZE										
Durable manufacturing		6.7	47.1		7.8	19.1	9.0	67.4	32.6	
Nondurable manufacturing		2.9	0		11.5	8.3	40.8	0	5.4	
Construction		25.7	3.9		4.8	0	0	0	10.7	
Public utilities and transportation		0	3.3		0	0.4	15.1	0	5.1	
Trade, retail and wholesale		44.8	25.2		25.8	5.9	6.4	0.7	12.6	
Finance, insurance, and real estate		13.3	10.5		16.3	2.5	4.7	0	3.7	
Services, other than education		6.7	3.3		16.1	17.8	18.8	0	8.9	
Education, public and private		0	6.6		17.2	37.2	0	26.1	16.6	
Government		0	0		0.5	8.8	5.2	5.8	4.3	
Total	(a)	100.0	100.0	(a)	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 3: May, Employment Size and Industry

Job Vacancies, by Employment Size and Industry Group

Industry Group	Employment Size									Standard Error of Total Number of Vacancies
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2.500 and Over	Total	
ESTIMATED NUMBER OF JOB VACANCIES										
Durable manufacturing	240	0	432	156	144	313	214	1,919	3,418	248.0
Nondurable manufacturing	0	12	172	90	123	288	119	0	804	129.0
Construction	204	324	152	0	156	0	0	0	836	241.0
Public utilities and transportation	52	84	36	0	0	11	11	63	257	73.3
Trade, retail and wholesale	288	180	164	222	150	172	120	0	1,296	223.0
Finance, insurance, and real estate	0	28	0	96	12	50	38	0	224	68.4
Services, other than education	0	134	48	222	48	297	107	0	856	132.0
Education, public and private	0	24	84	0	63	247	0	305	723	15.9
Government	0	0	84	48	5	42	34	149	362	36.4
Total, Monroe County	784	786	1,172	834	701	1,420	643	2,436	8,776	463.0
Standard error of total	246.0	198.0	288.0	195.0	184.0	79.2	0	0	463.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP										
Durable manufacturing	7.0	0	12.6	4.6	4.2	9.2	6.3	56.1	100.0	
Nondurable manufacturing	0	1.5	21.4	11.2	15.3	35.8	14.8	0	100.0	
Construction	24.4	38.8	18.2	0	18.7	0	0	0	100.0	
Public utilities and transportation	20.2	32.7	14.0	0	0	4.3	4.3	24.5	100.0	
Trade, retail and wholesale	22.2	13.9	12.7	17.1	11.6	13.3	9.3	0	100.0	
Finance, insurance, and real estate	0	12.5	0	42.9	5.4	22.3	17.0	0	100.0	
Services, other than education	0	15.7	5.6	25.9	5.6	34.7	12.5	0	100.0	
Education, public and private	0	3.3	11.6	0	8.7	34.2	0	42.2	100.0	
Government	0	0	23.2	13.3	1.4	11.6	9.4	41.2	100.0	
Total	8.9	9.0	13.4	9.5	8.0	16.2	7.3	27.8	100.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH EMPLOYMENT SIZE										
Durable manufacturing	30.6	0	36.9	18.7	20.5	22.0	33.3	78.8	38.9	
Nondurable manufacturing	0	1.5	14.7	10.8	17.5	20.3	18.5	0	9.2	
Construction	26.0	41.2	13.0	0	22.3	0	0	0	9.5	
Public utilities and transportation	6.6	10.7	3.1	0	0	0.8	1.7	2.6	2.9	
Trade, retail and wholesale	36.7	22.9	14.0	26.6	21.4	12.1	18.7	0	14.8	
Finance, insurance, and real estate	0	3.6	0	11.5	1.7	3.5	5.9	0	2.6	
Services, other than education	0	17.0	4.1	26.6	6.8	20.9	16.6	0	9.8	
Education, public and private	0	3.1	7.2	0	9.0	17.4	0	12.5	8.2	
Government	0	0	7.2	5.8	0.7	3.0	5.3	6.1	4.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 3: August, Employment Size and Industry

Job Vacancies, by Employment Size and Industry Group

Industry Group	Employment Size									Standard Error of Total Number of Vacancies
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total	
	ESTIMATED NUMBER OF JOB VACANCIES									
Durable manufacturing	50	308	244	234	90	316	267	2,007	3,516	281.0
Nondurable manufacturing	0	12	72	212	336	195	230	0	1,057	136.0
Construction	454	240	56	0	66	0	0	0	816[a]	304.0
Public utilities and transportation	0	84	18	6	0	13	20	40	181[a]	64.7
Trade, retail and wholesale	104	192	326	114	165	175	73	135	1,284	228.0
Finance, insurance, and real estate	0	0	36	42	18	46	37	0	179	39.7
Services, other than education	282	0	0	96	142	122	150	0	792	205.0
Education, public and private	0	12	48	0	30	84	0	212	386	12.7
Government	0	0	84	3	6	65	47	152	357	54.4
Total, Monroe County	890[a]	848[a]	884	707	853	1,016	824	2,546	8,568	542.0
Standard error of total	349.0	322.0	246.0	138.0	167.0	37.1	0	0	542.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP									
Durable manufacturing	1.4	8.8	6.9	6.7	2.6	9.0	7.6	57.1	100.0	
Nondurable manufacturing	0	1.1	6.8	20.1	31.8	18.4	21.8	0	100.0	
Construction									(a)	
Public utilities and transportation	0	46.4	9.9	3.3	0	7.2	11.0	22.1	100.0[a]	
Trade, retail and wholesale	8.1	15.0	25.4	8.9	12.9	13.6	5.7	10.5	100.0	
Finance, insurance, and real estate	0	0	20.1	23.5	10.1	25.7	20.7	0	100.0	
Services, other than education	35.6	0	0	12.1	17.9	15.4	18.9	0	100.0	
Education, public and private	0	3.1	12.4	0	7.8	21.8	0	54.9	100.0	
Government	0	0	23.5	0.8	1.7	18.2	13.2	42.6	100.0	
Total	10.4	9.9	10.3	8.3	10.0	11.9	9.6	29.7	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH EMPLOYMENT SIZE									
Durable manufacturing			27.6	33.1	10.6	31.1	32.4	78.8	41.0	
Nondurable manufacturing			8.1	30.0	39.4	19.2	27.9	0	12.3	
Construction			6.3	0	7.7	0	0	0	9.5	
Public utilities and transportation			2.0	0.8	0	1.3	2.4	1.6	2.1	
Trade, retail and wholesale			36.9	16.1	19.3	17.2	8.9	5.3	15.0	
Finance, insurance, and real estate			4.1	5.9	2.1	4.5	4.5	0	2.1	
Services, other than education			0	13.6	16.6	12.0	18.2	0	9.2	
Education, public and private			5.4	0	3.5	8.3	0	8.3	4.5	
Government			9.5	0.4	0.7	6.4	5.7	6.0	4.2	
Total	(a)	(a)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 3a: February, Employment Size and Industry

Job Vacancy Rate*, by Employment Size and Industry Group

Industry Group	Employment Size								
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total
Durable manufacturing	0	3.3	8.1	4.5	1.2	1.7	0.8	2.7	2.6
Nondurable manufacturing	0	2.4	0	0	2.0	1.1	3.2	0	1.7
Construction	9.6	5.4	1.2	14.7	2.2	0	0	0	6.9
Public utilities and transportation	18.9	0	1.3	0.7	0	0.5	1.8	0	4.1
Trade, retail and wholesale	2.2	3.1	4.7	1.8	2.9	1.8	0.8	0.6	2.3
Finance, insurance, and real estate	0	4.4	3.8	0	6.8	1.3	2.5	0	2.9
Services, other than education	1.7	0.7	0.7	2.6	2.8	5.9	4.3	0	2.5
Education, public and private	11.4	0	4.1	2.4	5.0	5.9	0	6.7	6.1
Government	0	0	0	6.6	0.5	11.6	1.7	1.9	2.6
Total, Monroe County	3.7	2.8	3.6	4.1	2.8	2.8	2.0	3.0	3.0

Explanatory notes and footnotes precede Table D.1.

*The job vacancy rate of an employment size and industry group is the total number of vacancies as a per cent of the sum of the total numbers of vacancies and employees of all employers in the group.

Table D. 3a: May, Employment Size and Industry

Job Vacancy Rate*, by Employment Size and Industry Group

Industry Group	Employment Size								
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total
Durable manufacturing	1.6	0	8.3	5.3	3.0	2.1	3.3	2.9	3.4
Nondurable manufacturing	0	0.5	11.2	5.7	2.7	2.7	2.4	0	3.0
Construction	6.2	8.0	7.8	0	3.0	0	0	0	4.9
Public utilities and transportation	4.1	10.4	3.3	0	0	1.1	0.5	2.4	2.6
Trade, retail and wholesale	2.3	3.8	2.8	4.3	2.8	2.9	1.9	0	2.8
Finance, insurance, and real estate	0	2.2	0	14.4	1.5	2.1	3.3	0	2.3
Services, other than education	0	3.8	2.1	3.1	1.3	7.0	4.1	0	2.6
Education, public and private	0	9.5	8.6	0	2.7	3.4	0	3.2	3.5
Government	0	0	10.6	4.5	0.9	6.4	1.8	2.0	2.8
Total, Monroe County	2.4	4.5	5.6	3.9	2.5	3.0	2.5	2.9	3.2

Explanatory notes and footnotes precede Table D.1.

*The job vacancy rate of an employment size and industry group is the total number of vacancies as a per cent of the sum of the total numbers of vacancies and employees of all employers in the group.

Table D. 3a: August, Employment Size and Industry

Job Vacancy Rate*, by Employment Size and Industry Group

Industry Group	Employment Size								
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total
Durable manufacturing	4.0	25.0	5.4	8.1	1.8	2.3	3.3	2.9	3.3
Nondurable manufacturing	0	0.4	7.9	15.9	5.8	1.9	3.6	0	3.8
Construction	12.0	6.1	3.1	0	2.1	0	0	0	4.7
Public utilities and transportation	0	15.8	1.4	1.1	0	1.3	0.8	1.4	1.8
Trade, retail and wholesale	0.8	4.4	5.3	2.1	3.5	2.6	1.9	4.8	2.7
Finance, insurance, and real estate	0	0	1.6	6.7	2.3	1.9	3.1	0	1.7
Services, other than education	2.8	0	0	1.8	3.0	4.2	4.1	0	2.4
Education, public and private	0	6.7	4.9	0	1.5	1.1	0	2.2	1.8
Government	0	0	10.4	1.2	0.4	6.8	2.5	1.8	2.5
Total, Monroe County	2.7	4.8	4.0	3.4	3.0	2.2	3.0	2.8	3.0

Explanatory notes and footnotes precede Table D.1.

*The job vacancy rate of an employment size and industry group is the total number of vacancies as a per cent of the sum of the total numbers of vacancies and employees of all employers in the group.

Table D. 4: February, Employment Size and Job Vacancy Rate

Employers, by Employment Size and Job Vacancy Rate

Job Vacancy Rate*	Employment Size								
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total
ESTIMATED NUMBER OF EMPLOYERS									
0	8,754	774	372	118	45	17	1	0	10,081
0.01— 1.99	0	0	0	27	47	38	10	6	128
2.00— 3.99	0	0	116	18	19	16	6	4	179
4.00— 5.99	0	24	24	33	18	5	1	1	106
6.00— 7.99	0	108	80	0	9	2	1	1	201
8.00— 9.99	0	84	64	0	3	5	0	0	156
10.00—13.99	0	102	18	12	12	2	0	1	147
14.00—19.99	132	0	12	0	0	1	0	0	145
20.00 and over	472	0	12	18	0	1	0	0	503
Total, Monroe county	9,358	1,092	698	226	153	87	19[b]	13[b]	11,646
PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH JOB VACANCY RATE GROUP									
0	86.8	7.7	3.7	1.2	0.4	0.2	0	0	100.0
0.01— 1.99	0	0	0	21.1	36.7	29.7	7.8	4.7	100.0
2.00— 3.99	0	0	64.8	10.1	10.6	8.9	3.4	2.2	100.0
4.00— 5.99	0	22.6	22.6	31.1	17.0	4.7	0.9	0.9	100.0
6.00— 7.99	0	53.7	39.8	0	4.5	1.0	0.5	0.5	100.0
8.00— 9.99	0	53.8	41.0	0	1.9	3.2	0	0	100.0
10.00—13.99	0	69.4	12.2	8.2	8.2	1.4	0	0.7	100.0
14.00—19.99	91.0	0	8.3	0	0	0.7	0	0	100.0
20.00 and over	93.8	0	2.4	3.6	0	0.2	0	0	100.0
Total	80.4	9.4	6.0	1.9	1.3	0.7	0.2	0.1	100.0
PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH EMPLOYMENT SIZE GROUP									
0	93.5	70.9	53.3	52.2	29.4	19.5			86.6
0.01— 1.99	0	0	0	11.9	30.7	43.7			1.1
2.00— 3.99	0	0	16.6	8.0	12.4	18.4			1.5
4.00— 5.99	0	2.2	3.4	14.6	11.8	5.7			0.9
6.00— 7.99	0	9.9	11.5	0	5.9	2.3			1.7
8.00— 9.99	0	7.7	9.2	0	2.0	5.7			1.3
10.00—13.99	0	9.3	2.6	5.3	7.8	2.3			1.3
14.00—19.99	1.4	0	1.7	0	0	1.1			1.2
20.00 and over	5.0	0	1.7	8.0	0	1.1			4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

*V as per cent of (E+V).

Table D. 4: May, Employment Size and Job Vacancy Rate

Employers, by Employment Size and Job Vacancy Rate

Job Vacancy Rate*	Employment Size								
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total
				ESTIMATED NUMBER OF EMPLOYERS					
0	8,948	712	293	165	83	8	1	1	10,211
0.01— 1.99	0	0	0	36	38	37	6	4	121
2.00— 3.99	0	0	60	12	31	19	5	7	134
4.00— 5.99	0	120	92	21	9	10	3	0	255
6.00— 7.99	0	40	82	6	6	8	1	0	143
8.00— 9.99	0	90	24	18	9	4	0	0	145
10.00—13.99	0	108	12	24	13	3	0	1	161
14.00—19.99	184	140	102	15	0	0	0	0	441
20.00 and over	334	0	12	6	0	0	0	0	352
Total, Monroe County	9,466	1,210	677	303	189	89	16[b]	13[b]	11,963
				PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH JOB VACANCY RATE GROUP					
0	87.6	7.0	2.9	1.6	0.8	0.1	0	0	100.0
0.01— 1.99	0	0	0	29.8	31.4	30.6	5.0	3.3	100.0
2.00— 3.99	0	0	44.8	9.0	23.1	14.2	3.7	5.2	100.0
4.00— 5.99	0	47.1	36.1	8.2	3.5	3.9	1.2	0	100.0
6.00— 7.99	0	28.0	57.3	4.2	4.2	5.6	0.7	0	100.0
8.00— 9.99	0	62.1	16.6	12.4	6.2	2.8	0	0	100.0
10.00—13.99	0	67.1	7.5	14.9	8.1	1.9	0	0.6	100.0
14.00—19.99	41.7	31.7	23.1	3.4	0	0	0	0	100.0
20.00 and over	94.9	0	3.4	1.7	0	0	0	0	100.0
Total	79.1	10.1	5.7	2.5	1.6	0.7	0.1	0.1	100.0
				PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH EMPLOYMENT SIZE GROUP					
0	94.5	58.8	43.3	54.5	43.9	9.0			85.4
0.01— 1.99	0	0	0	11.9	20.1	41.6			1.0
2.00— 3.99	0	0	8.9	4.0	16.4	21.3			1.1
4.00— 5.99	0	9.9	13.6	6.9	4.8	11.2			2.1
6.00— 7.99	0	3.3	12.1	2.0	3.2	9.0			1.2
8.00— 9.99	0	7.4	3.5	5.9	4.8	4.5			1.2
10.00—13.99	0	8.9	1.8	7.9	6.9	3.4			1.3
14.00—19.99	1.9	11.6	15.1	5.0	0	0			3.7
20.00 and over	3.5	0	1.8	2.0	0	0			2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

*V as per cent of (E+V).

Table D. 4: August, Employment Size and Job Vacancy Rate

Employers, by Employment Size and Job Vacancy Rate

Job Vacancy Rate*	Employment Size								
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,499	2,500 and Over	Total
ESTIMATED NUMBER OF EMPLOYERS									
0	8,820	846	426	182	54	13	1	0	10,342
0.01— 1.99	0	0	0	15	54	43	5	8	125
2.00— 3.99	0	0	18	51	37	17	6	3	132
4.00— 5.99	0	40	116	0	6	13	5	1	181
6.00— 7.99	0	12	24	12	3	2	1	0	54
8.00— 9.99	0	28	28	6	12	2	0	1	77
10.00—13.99	52	96	18	24	19	0	0	1	210
14.00—19.99	52	80	58	6	0	0	0	0	196
20.00 and over	372	56	12	1	0	0	0	0	411
Total, Monroe County	9,296	1,158	700	297	185	90	18[b]	14[b]	11,758
PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH JOB VACANCY RATE GROUP									
0	85.3	8.2	4.1	1.8	0.5	0.1	0	0	100.0
0.01— 1.99	0	0	0	12.0	43.2	34.4	4.0	6.4	100.0
2.00— 3.99	0	0	13.6	38.6	28.0	12.9	4.5	2.3	100.0
4.00— 5.99	0	22.1	64.1	0	3.3	7.2	2.8	0.6	100.0
6.00— 7.99	0	22.2	44.4	22.2	5.6	3.7	1.9	0	100.0
8.00— 9.99	0	36.4	36.4	7.8	15.6	2.6	0	1.3	100.0
10.00—13.99	24.8	45.7	8.6	11.4	9.0	0	0	0.5	100.0
14.00—19.99	26.5	40.8	29.6	3.1	0	0	0	0	100.0
20.00 and over	84.4	12.7	2.7	0.2	0	0	0	0	100.0
Total	79.1	9.8	6.0	2.5	1.6	0.8	0.2	0.1	100.0
PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH EMPLOYMENT SIZE GROUP									
0	94.9	73.1	60.9	61.3	29.2	14.4			88.0
0.01— 1.99	0	0	0	5.1	29.2	47.8			1.1
2.00— 3.99	0	0	2.6	17.2	20.0	18.9			1.1
4.00— 5.99	0	3.5	16.6	0	3.2	14.4			1.5
6.00— 7.99	0	1.0	3.4	4.0	7.6	2.2			0.5
8.00— 9.99	0	2.4	4.0	2.0	6.5	2.2			0.7
10.00—13.99	0.6	8.3	2.6	8.1	10.3	0			1.8
14.00—19.99	0.6	6.9	8.3	2.0	0	0			1.7
20.00 and over	4.0	4.8	1.7	0.3	0	0			3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

*V as per cent of (E+V)

Table D. 5: February, Industry and Job Vacancy Rate

Employers, by Industry Group and Job Vacancy Rate

Industry Group	Job Vacancy Rate*									
	0	0.01—1.99	2.00—3.99	4.00—5.99	6.00—7.99	8.00—9.99	10.00—13.99	14.00—19.99	20.00 and Over	Total
	ESTIMATED NUMBER OF EMPLOYERS									
Durable manufacturing	296	37	30	20	30	56	0	12	18	499
Nondurable manufacturing	631	24	7	19	1	0	0	0	0	682
Construction	1,009	0	28	6	80	28	0	52	120	1,323
Public utilities and transportation	214	8	1	12	0	0	0	0	142	377
Trade, retail and wholesale	3,471	24	37	39	40	28	98	52	80	3,869
Finance, insurance, and real estate	641	4	57	0	0	12	34	0	0	748
Services, other than education	3,536	24	9	1	32	16	7	0	142	3,767
Education, public and private	78	2	9	8	18	16	2	29	0	162
Government	205	5	1	1	0	0	6	0	1	219
Total, Monroe County	10,081	128	179	106	201	156	147	145	503	11,646
	PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH INDUSTRY GROUP									
Durable manufacturing	59.3	7.4	6.1	4.0	6.0	11.2	0	2.4	3.6	100.0
Nondurable manufacturing	92.5	3.5	1.0	2.8	0.1	0	0	0	0	100.0
Construction	76.3	0	2.1	0.5	6.0	2.1	0	3.9	9.1	100.0
Public utilities and transportation	56.8	2.1	0.3	3.2	0	0	0	0	37.7	100.0
Trade, retail and wholesale	89.7	0.6	1.0	1.0	1.0	0.7	2.5	1.3	2.1	100.0
Finance, insurance, and real estate	85.7	0.5	7.6	0	0	1.6	4.5	0	0	100.0
Services, other than education	93.9	0.6	0.2	0	0.8	0.4	0.2	0	3.8	100.0
Education, public and private	48.1	1.2	5.6	4.9	11.1	9.9	1.2	17.9	0	100.0
Government	93.6	2.3	0.5	0.5	0	0	2.7	0	0.5	100.0
Total	86.6	1.1	1.5	0.9	1.7	1.3	1.3	1.2	4.3	100.0
	PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH JOB VACANCY RATE GROUP									
Durable manufacturing	2.9	28.9	16.8	18.9	14.9	35.9	0	8.3	3.6	4.3
Nondurable manufacturing	6.3	18.8	3.9	17.9	0.5	0	0	0	0	5.9
Construction	10.0	0	15.6	5.7	39.8	17.9	0	35.9	23.9	11.4
Public utilities and transportation	2.1	6.3	0.6	11.3	0	0	0	0	28.2	3.2
Trade, retail and wholesale	34.4	18.8	20.7	36.8	19.9	17.9	66.7	35.9	15.9	33.2
Finance, insurance, and real estate	6.4	3.1	31.8	0	0	7.7	23.1	0	0	6.4
Services, other than education	35.1	18.8	5.0	0.9	15.9	10.3	4.8	0	28.2	32.3
Education, public and private	0.8	1.6	5.0	7.5	9.0	10.3	1.4	20.0	0	1.4
Government	2.0	3.9	0.6	0.9	0	0	4.1	0	0.2	1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

*V as per cent of (E+V)

Table D. 5: May, Industry and Job Vacancy Rate

Employers, by Industry Group and Job Vacancy Rate

Industry Group	Job Vacancy Rate*									
	0	0.01—1.99	2.00—3.99	4.00—5.99	6.00—7.99	8.00—9.99	10.00—13.99	14.00—19.99	20.00 and Over	Total
				ESTIMATED NUMBER OF EMPLOYERS						
Durable manufacturing	287	164	18	9	85	22	12	4	4	605
Nondurable manufacturing	564	30	6	50	14	15	3	3	0	685
Construction	965	224	158	0	28	0	6	0	0	1,381
Public utilities and transportation	276	52	18	28	0	2	0	1	0	377
Trade, retail and wholesale	3,490	114	235	31	26	17	5	1	0	3,919
Finance, insurance, and real estate	702	31	0	3	3	8	1	0	0	748
Services, other than education	3,658	114	49	9	24	5	5	3	0	3,867
Education, public and private	85	1	36	19	9	5	5	0	2	162
Government	184	6	0	12	13	0	3	0	1	219
Total, Monroe County	10,211	736	520	161	202	74	40[b]	12[b]	7[b]	11,963
				PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH INDUSTRY GROUP						
Durable manufacturing	47.4	27.1	3.0	1.5	14.0	3.6	2.0	0.7	0.7	100.0
Nondurable manufacturing	82.3	4.4	0.9	7.3	2.0	2.2	0.4	0.4	0	100.0
Construction	69.9	16.2	11.4	0	2.0	0	0.4	0	0	100.0
Public utilities and transportation	73.2	13.8	4.8	7.4	0	0.5	0	0.3	0	100.0
Trade, retail and wholesale	89.1	2.9	6.0	0.8	0.7	0.4	0.1	0	0	100.0
Finance, insurance, and real estate	93.9	4.1	0	0.4	0.4	1.1	0.1	0	0	100.0
Services, other than education	94.6	2.9	1.3	0.2	0.6	0.1	0.1	0.1	0	100.0
Education, public and private	52.4	0.6	22.2	11.7	5.6	3.1	3.1	0	1.2	100.0
Government	84.0	2.7	0	5.5	5.9	0	1.4	0	0.5	100.0
Total	85.4	6.2	4.3	1.3	1.7	0.6	0.3	0.1	0.1	100.0
				PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH JOB VACANCY RATE GROUP						
Durable manufacturing	2.8	22.3	3.4	5.6	42.1	29.7				5.1
Nondurable manufacturing	5.5	4.1	1.2	31.1	6.9	20.3				5.7
Construction	9.5	30.4	30.4	0	13.9	0				11.5
Public utilities and transportation	2.7	7.1	3.5	17.4	0	2.7				3.2
Trade, retail and wholesale	34.2	15.5	45.2	19.3	12.9	23.0				32.8
Finance, insurance, and real estate	6.9	4.2	0	1.9	1.5	10.8				6.3
Services, other than education	35.8	15.5	9.4	5.6	11.9	6.8				32.3
Education, public and private	0.8	0.1	6.9	11.8	4.5	6.8				1.4
Government	1.8	0.8	0	7.5	6.4	0				1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	(b)	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

*V as per cent of (E+V)

Table D.5: August, Industry and Job Vacancy Rate

Employers, by Industry Group and Job Vacancy Rate

Industry Group	Job Vacancy Rate* 0	0.01—1.99	2.00—3.99	4.00—5.99	6.00—7.99	8.00—9.99	10.00—13.99	14.00—19.99	20.00 and Over	Total
ESTIMATED NUMBER OF EMPLOYERS										
Durable manufacturing	341	31	18	35	16	1	48	18	90	598
Nondurable manufacturing	558	7	17	14	2	6	24	0	1	629
Construction	1,087	0	0	6	0	56	28	52	152	1,381
Public utilities and transportation	321	10	6	12	0	0	0	28	0	377
Trade, retail and wholesale	3,417	28	33	63	6	0	110	92	28	3,777
Finance, insurance, and real estate	718	6	5	1	18	0	0	0	0	748
Services, other than education	3,627	12	43	2	0	13	0	0	170	3,867
Education, public and private	85	21	8	36	12	0	0	0	0	162
Government	188	10	2	12	0	1	0	6	0	219
Total, Monroe County	10,342	125	132	181	54b	77	210	196	441	11,758
PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH INDUSTRY GROUP										
Durable manufacturing	57.0	5.2	3.0	5.9	2.7	0.2	8.0	3.0	15.0	100.0
Nondurable manufacturing	88.7	1.1	2.7	2.2	0.3	1.0	3.8	0	0.2	100.0
Construction	78.7	0	0	0.4	0	4.1	2.0	3.8	11.0	100.0
Public utilities and transportation	85.1	2.7	1.6	3.2	0	0	0	7.4	0	100.0
Trade, retail and wholesale	90.5	0.7	0.9	1.7	0.2	0	2.9	2.4	0.7	100.0
Finance, insurance, and real estate	96.0	0.8	0.7	0.1	2.4	0	0	0	0	100.0
Services, other than education	93.8	0.3	1.1	0.1	0	0.3	0	0	4.4	100.0
Education, public and private	52.5	13.0	4.9	22.2	7.4	0	0	0	0	100.0
Government	85.8	4.6	0.9	5.5	0	0.5	0	2.7	0	100.0
Total	88.0	1.1	1.1	1.5	0.5	0.7	1.8	1.7	3.8	100.0
PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH JOB VACANCY RATE GROUP										
Durable manufacturing	3.3	24.8	13.6	19.3		1.3	22.9	9.2	20.4	5.1
Nondurable manufacturing	5.4	5.6	12.9	7.7		7.8	11.4	0	0.2	5.3
Construction	10.5	0	0	3.3		72.7	13.3	26.5	34.5	11.7
Public utilities and transportation	3.1	8.0	4.5	6.6		0	0	14.3	0	3.2
Trade, retail and wholesale	33.0	22.4	25.0	34.8		0	52.4	46.9	6.3	32.1
Finance, insurance, and real estate	6.9	4.8	3.8	0.6		0	0	0	0	6.4
Services, other than education	35.1	9.6	32.6	1.1		16.9	0	0	38.5	32.9
Education, public and private	0.8	16.8	6.1	19.9		0	0	0	0	1.4
Government	1.8	8.0	1.5	6.6		1.3	0	3.1	0	1.9
Total	100.0	100.0	100.0	100.0	(b)	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

*V as per cent of (E+V)

Table D. 6: February, Industry and Number of Vacancies

Employers, by Industry and Number of Vacancies

Industry Group	Number of Vacancies									
	None	1	2	3 or 4	5—9	10—19	20—49	50—99	100 or More	Total
	ESTIMATED NUMBER OF EMPLOYERS									
Durable manufacturing	296	50	59	35	22	25	7	1	4	499
Nondurable manufacturing	631	18	6	4	17	1	3	1	1	682
Construction	1,009	188	52	28	34	0	12	0	0	1,323
Public utilities and transportation	214	6	154	0	1	0	1	1	0	377
Trade, retail and wholesale	3,471	135	154	84	13	5	7	0	0	3,869
Finance, insurance, and real estate	641	52	41	4	1	8	1	0	0	748
Services, other than education	3,536	182	21	6	7	9	3	3	0	3,767
Education, public and private	78	29	27	0	10	9	4	2	3	162
Government	205	3	0	0	6	0	3	1	1	219
Total, Monroe County	10,081	663	514	161	111	57[b]	41[b]	9[b]	9[b]	11,646
	PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH INDUSTRY GROUP									
Durable manufacturing	59.3	10.0	11.8	7.0	4.4	5.0	1.4	0.2	0.8	100.0
Nondurable manufacturing	92.5	2.6	0.9	0.6	2.5	0.1	0.4	0.1	0.1	100.0
Construction	76.3	14.2	3.9	2.1	2.6	0	0.9	0	0	100.0
Public utilities and transportation	56.8	1.6	40.8	0	0.3	0	0.3	0.3	0	100.0
Trade, retail and wholesale	89.7	3.5	4.0	2.2	0.3	0.1	0.2	0	0	100.0
Finance, insurance, and real estate	85.7	7.0	5.5	0.5	0.1	1.1	0.1	0	0	100.0
Services, other than education	93.9	4.8	0.6	0.2	0.2	0.2	0.1	0.1	0	100.0
Education, public and private	48.1	17.9	16.7	0	6.2	5.6	2.5	1.2	1.9	100.0
Government	93.6	1.4	0	0	2.7	0	1.4	0.5	0.5	100.0
Total	86.6	5.7	4.4	1.4	1.0	0.5	0.4	0.1	0.1	100.0
	PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH NUMBER OF VACANCIES									
Durable manufacturing	2.9	7.5	11.5	21.7	19.8					4.3
Nondurable manufacturing	6.3	2.7	1.2	2.5	15.3					5.9
Construction	10.0	28.4	10.1	17.4	30.6					11.4
Public utilities and transportation	2.1	0.9	30.0	0	0.9					3.2
Trade, retail and wholesale	34.4	20.4	30.0	52.2	11.7					33.2
Finance, insurance, and real estate	6.4	7.8	8.0	2.5	0.9					6.4
Services, other than education	35.1	27.5	4.1	3.7	6.3					32.3
Education, public and private	0.8	4.4	5.3	0	9.0					1.4
Government	2.0	0.5	0	0	5.4					1.9
Total	100.0	100.0	100.0	100.0	100.0	(b)	(b)	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 6: May, Industry and Number of Vacancies

Employers, by Industry and Number of Vacancies

Industry Group	Number of Vacancies									
	None	1	2	3 or 4	5—9	10—19	20—49	50—99	100 or More	Total
	ESTIMATED NUMBER OF EMPLOYERS									
Durable manufacturing	287	164	18	9	85	22	21	4	4	605
Nondurable manufacturing	564	30	6	50	14	15	3	3	0	685
Construction	965	224	158	0	28	0	6	0	0	1,381
Public utilities and transportation	276	52	18	28	0	2	0	1	0	377
Trade, retail and wholesale	3,490	114	235	31	26	17	5	1	0	3,919
Finance, insurance, and real estate	702	31	0	3	3	8	1	0	0	748
Services, other than education	3,658	114	49	9	24	5	5	3	0	3,867
Education, public and private	85	1	36	19	9	5	5	0	2	162
Government	184	6	0	12	13	0	3	0	1	219
Total, Monroe County	10,211	736	520	161	202	74	40[b]	12[b]	7[b]	11,963
	PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH INDUSTRY GROUP									
Durable manufacturing	47.4	27.1	3.0	1.5	14.0	3.6	2.0	0.7	0.7	100.0
Nondurable manufacturing	82.3	4.4	0.9	7.3	2.0	2.2	0.4	0.4	0	100.0
Construction	69.9	16.2	11.4	0	2.0	0	0.4	0	0	100.0
Public utilities and transportation	73.2	13.8	4.8	7.4	0	0.5	0	0.3	0	100.0
Trade, retail and wholesale	89.0	2.9	6.0	0.8	0.7	0.4	0.1	(d)	0	100.0
Finance, insurance, and real estate	93.8	4.1	0	0.4	0.4	1.1	0.1	0	0	100.0
Services, other than education	94.6	2.9	1.3	0.2	0.6	0.1	0.1	0.1	0	100.0
Education, public and private	52.5	0.6	22.2	11.7	5.6	3.1	3.1	0	1.2	100.0
Government	84.0	2.7	0	5.5	5.9	0	1.4	0	0.4	100.0
Total	85.4	6.2	4.3	1.3	1.7	0.6	0.3	0.1	0.1	100.0
	PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH NUMBER OF VACANCIES									
Durable manufacturing	2.8	22.3	3.5	5.6	42.1	29.7				5.0
Nondurable manufacturing	5.5	4.1	1.2	31.1	6.9	20.3				5.7
Construction	9.5	30.4	30.4	0	13.9	0				11.5
Public utilities and transportation	2.7	7.1	3.5	17.4	0	2.7				3.2
Trade, retail and wholesale	34.2	15.5	45.2	19.3	12.9	23.0				32.8
Finance, insurance, and real estate	6.9	4.2	0	1.9	1.5	10.8				6.3
Services, other than education	35.8	15.5	9.4	5.6	11.9	6.8				32.3
Education, public and private	0.8	0.1	6.9	11.8	4.5	6.8				1.4
Government	1.8	0.8	0	7.5	6.4	0				1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	(b)	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D: 6: August, Industry and Number of Vacancies

Employers, by Industry and Number of Vacancies

Industry Group	Number of Vacancies									
	None	1	2	3 or 4	5—9	10—19	20—49	50—99	100 or More	Total
					ESTIMATED NUMBER OF EMPLOYERS					
Durable manufacturing	341	82	38	24	77	21	7	3	5	598
Nondurable manufacturing	558	12	6	0	22	18	8	4	1	629
Construction	1,087	28	158	52	50	6	0	0	0	1,381
Public utilities and transportation	321	24	0	28	2	0	2	0	0	377
Trade, retail and wholesale	3,417	150	90	37	67	11	3	1	1	3,777
Finance, insurance, and real estate	718	1	3	15	8	2	1	0	0	748
Services, other than education	3,627	151	27	6	44	7	3	2	0	3,867
Education, public and private	85	36	18	11	9	1	1	0	1	162
Government	188	9	12	0	0	6	1	3	0	219
Total, Monroe County	10,342	493	352	173	279	72	26[b]	13[b]	8[b]	11,758
					PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH INDUSTRY GROUP					
Durable manufacturing	57.0	13.7	6.4	4.0	12.9	3.5	1.2	0.5	0.8	100.0
Nondurable manufacturing	88.7	1.9	1.0	0	3.5	2.9	1.3	0.6	0.2	100.0
Construction	78.7	2.0	11.4	3.8	3.6	0.4	0	0	0	100.0
Public utilities and transportation	85.1	6.4	0	7.4	0.5	0	0.5	0	0	100.0
Trade, retail and wholesale	90.5	4.0	2.4	1.0	1.8	0.3	0.1	(d)	(d)	100.0
Finance, insurance, and realestate	96.0	0.1	0.4	2.0	1.1	0.3	0.1	0	0	100.0
Services, other than education	93.8	3.9	0.7	0.2	1.1	0.2	0.1	0.1	0	100.0
Education, public and private	52.5	22.2	11.1	6.8	5.6	0.6	0.6	0	0.6	100.0
Government	85.8	4.1	5.5	0	0	2.7	0.5	1.4	0	100.0
Total	88.0	4.2	3.0	1.5	2.4	0.6	0.2	0.1	0.1	100.0
					PER CENT DISTRIBUTION OF EMPLOYERS FOR EACH NUMBER OF VACANCIES					
Durable manufacturing	3.3	16.6	10.8	13.9	27.6	29.2				5.1
Nondurable manufacturing	5.4	2.4	1.7	0	7.9	25.0				5.3
Construction	10.5	5.7	44.9	30.1	17.9	8.3				11.7
Public utilities and transportation	3.1	4.9	0	16.2	0.7	0				3.2
Trade, retail and wholesale	33.0	30.4	25.6	21.4	24.0	15.3				32.1
Finance, insurance, and real estate	6.9	0.2	0.9	8.7	2.9	2.8				6.4
Services, other than education	35.1	30.6	7.7	3.5	15.8	9.7				32.9
Education, public and private	0.8	7.3	5.1	6.4	3.2	1.4				1.4
Government	1.8	1.8	3.4	0	0	8.3				1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	(b)	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 7: February, Industry, by Starting Date

Job Vacancies, by Industry Group and Starting Date

Industry Group	Starting Date											Standard Error of Total Number of Vacancies
	Immediately	Later in February 1965	March	April	May	June	July	August	September	October 1965 or Later	Total	
	ESTIMATED NUMBER OF JOB VACANCIES											
Durable manufacturing	2,281	38	191	32	16	13	13	1	3	2	2,590	173.0
Nondurable manufacturing	408	19	0	1	0	3	0	0	0	0	431	22.6
Construction	330	0	0	112	408	0	0	0	0	0	850[a]	329.0
Public utilities and transportation	91	5	0	284	0	28	0	0	0	0	408[a]	284.0
Trade, retail and wholesale	876	71	17	40	0	0	0	0	0	0	1,004	223.0
Finance, insurance, and real estate	208	12	73	0	1	0	0	0	0	0	294	54.8
Services, other than education	561	123	19	0	0	1	0	0	6	0	710	158.0
Education, public and private	136	0	6	9	0	0	112	0	1,057	0	1,320	36.4
Government	258	0	0	1	0	80	1	0	0	0	340	43.9
Total, Monroe County	5,149	268	306[a]	479[a]	425[a]	125	126	1[b]	1,066	2[b]	7,947	548.0
Standard error of total	353.0	52.7	123.0	305.0	283.0	0	0	0	82.4	(b)	548.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP											
Durable manufacturing	88.1	1.5	7.4	1.2	0.6	0.5	0.5	(d)	0.1	0.1	100.0	
Nondurable manufacturing	94.7	4.4	0	0.2	0	0.7	0	0	0	0	100.0	
Construction											(a)	
Public utilities and transportation											(a)	
Trade, retail and wholesale	87.3	7.1	1.7	4.0	0	0	0	0	0	0	100.0	
Finance, insurance, and real estate	70.7	4.1	24.8	0	0.3	0	0	0	0	0	100.0	
Services, other than education	79.0	17.3	2.7	0	0	0.1	0	0	0.8	0	100.0	
Education, public and private	10.3	0	0.5	0.7	0	0	8.5	0	80.1	0	100.0	
Government	75.9	0	0	0.3	0	23.5	0.3	0	0	0	100.0	
Total	64.8	3.4	3.9	6.0	5.3	1.6	1.6	(d)	13.4	(d)	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE											
Durable manufacturing	44.3	14.2	62.4			10.4	10.3		0.3		32.6	
Nondurable manufacturing	7.9	7.1	0			2.4	0		0		5.4	
Construction	6.4	0	0			0	0		0		10.7	
Public utilities and transportation	1.8	1.9	0			22.4	0		0		5.1	
Trade, retail and wholesale	17.0	26.5	5.6			0	0		0		12.6	
Finance, insurance, and real estate	4.0	4.5	23.9			0	0		0		3.7	
Services, other than education	10.9	45.9	6.2			0.8	0		0.6		8.9	
Education, public and private	2.6	0	2.0			0	88.9		99.2		16.6	
Government	5.0	0	0			64.0	0.8		0		4.3	
Total	100.0	100.0	100.0[a]	(a)	(a)	100.0	100.0	(b)	100.0	(b)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 7: May, Industry, by Starting Date

Job Vacancies, by Industry Group and Starting Date

Industry Group	Starting Date								Standard Error of Total Number of Vacancies
	Immediately	Later in May 1965	June	July	August	September	October 1965 or Later	Total	
ESTIMATED NUMBER OF JOB VACANCIES									
Durable manufacturing	3,166	45	112	53	12	12	18	3,418	243.0
Nondurable manufacturing	686	24	60	34	0	0	0	804	129.0
Construction	736	0	100	0	0	0	0	836	241.0
Public utilities and transportation	245	0	12	0	0	0	0	257	73.3
Trade, retail and wholesale	1,177	2	95	13	3	0	6	1,296	223.0
Finance, insurance, and real estate	207	0	3	1	1	12	0	224	68.4
Services, other than education	649	78	40	77	0	12	0	856	132.0
Education, public and private	162	1[a]	12	82	12	453	1	723	15.9
Government	314	0	0	48	0	0	0	362	34.9
Total, Monroe County	7,342	150	434	308	28[a,b]	489	25[b]	8,776	463.0
Standard error of total	445.00	5.39	117.00	76.80	11.70	52.40	0	463.00	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP									
Durable manufacturing	92.6	1.3	3.3	1.6	0.4	0.4	0.5	100.0	
Nondurable manufacturing	85.3	3.0	7.5	4.2	0	0	0	100.0	
Construction	88.0	0	12.0	0	0	0	0	100.0	
Public utilities and transportation	95.3	0	4.7	0	0	0	0	100.0	
Trade, retail and wholesale	90.8	0.2	7.3	1.0	0.2	0	0.5	100.0	
Finance, insurance, and real estate	92.4	0	1.3	0.4	0.4	5.4	0	100.0	
Services, other than education	75.8	9.1	4.7	9.0	0	1.4	0	100.0	
Education, public and private	22.4	0.1	1.7	11.3	1.7	62.7	0.1	100.0	
Government	86.7	0	0	13.3	0	0	0	100.0	
Total	83.7	1.7	4.9	3.5	0.3	5.6	0.3	100.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE									
Durable manufacturing	43.1	30.0	25.8	17.2		2.5		38.9	
Nondurable manufacturing	9.3	16.0	13.8	11.0		0		9.2	
Construction	10.0	0	23.0	0		0		9.5	
Public utilities and transportation	3.3	0	2.8	0		0		2.9	
Trade, retail and wholesale	16.0	1.3	21.9	4.2		0		14.8	
Finance, insurance, and real estate	2.8	0	0.7	0.3		2.5		2.6	
Services, other than education	8.8	52.0	9.2	25.0		2.5		9.8	
Education, public and private	2.2	0.7	2.8	26.6		92.6		8.2	
Government	4.3	0	0	15.6		0		4.1	
Total	100.0	100.0	100.0	100.0	(a,b)	100.0	(b)	100.0	

Explanatory notes and footnotes precede Table D. 1.

Table D. 7: August, Industry, by Starting Date

Job Vacancies, by Industry Group and Starting Date

Industry Group	Starting Date					Standard Error of Total Number of Vacancies
	Immediately	Later in August 1965	September	October, November, and December	Total	
ESTIMATED NUMBER OF JOB VACANCIES						
Durable manufacturing	3,348	61	64	43	3 516	281.0
Nondurable manufacturing	848	0	209	0	1,057	136.0
Construction	566	0	250	0	816[a]	304.0
Public utilities and transportation	171	0	4	6	181[a]	61.7
Trade, retail and wholesale	1,144	22	93	25	1,284	228.0
Finance, insurance, and real estate	132	0	47	0	179	39.7
Services, other than education	657	67	9	59	792	205.0
Education, public and private	197	2	187	0	386	12.7
Government	333	0	24	0	357	54.4
Total, Monroe County	7,396	152	887	133[a]	8,568	
Standard error of total	487.0	14.7	259	59.7	542.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP						
Durable manufacturing	95.2	1.7	1.8	1.2	100.0	
Nondurable manufacturing	80.2	0	19.8	0	100.0	
Construction					(a)	
Public utilities and transportation	94.5	0	2.2	3.3	100.0[a]	
Trade, retail and wholesale	89.1	1.7	7.2	2.0	100.0	
Finance, insurance, and real estate	73.7	0	26.3	0	100.0	
Services, other than education	83.0	8.5	1.1	7.4	100.0	
Education, public and private	51.0	0.5	48.4	0	100.0	
Government	93.3	0	6.7	0	100.0	
Total	86.3	1.8	10.4	1.5	100.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE						
Durable manufacturing	45.3	40.1	7.2		41.0	
Nondurable manufacturing	11.5	0	23.6		12.3	
Construction	7.7	0	28.2		9.5	
Public utilities and transportation	2.3	0	0.5		2.1	
Trade, retail and wholesale	15.5	14.5	10.5		15.0	
Finance, insurance, and real estate	1.8	0	5.3		2.1	
Services, other than education	8.9	44.1	1.0		9.2	
Education, public and private	2.7	1.3	21.1		4.5	
Government	4.5	0	2.7		4.2	
Total	100.0	100.0	100.0	(a)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 8: February, Industry and Occupation

Job Vacancies, by Industry and Occupation Groups

Occupation Group	Industry Group										Standard Error of Total Number of Vacancies
	Durable Manu-facturing	Non-durable Manu-facturing	Con-struction	Public Utilities and Trans-portation	Trade, Retail and Whole-sale	Finance, Insurance, and Real Estate	Services, Other than Education	Educa-tion, Public and Private	Govern-ment	Total	
ESTIMATED NUMBER OF JOB VACANCIES											
Professional, semiprofessional, and managerial workers	969	34	36	24	56	3	166	1,191	177	2,656	92.9
Clerical and sales workers	245	54	138	52	271	263	54	25	56	1,158	145.0
Service workers	61	14	0	12	165	28	194	76	56	606	81.4
Skilled workers	593	54	398	15	235	0	149	28	9	1,481	325.0
Semiskilled workers	520	245	168	304	248	0	52	0	2	1,539	360.0
Unskilled workers	202	30	110	1	29	0	95	0	40	507	140.0
Total, Monroe County	2,590	431	850[a]	408[a]	1,004	294	710	1,320	340	7,947	548.0
Standard error of total	173.0	22.6	329.0	284.0	223.0	54.8	158.0	36.4	43.9	548.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP											
Professional, semiprofessional, and managerial workers	36.5	1.3	1.4	0.9	2.1	0.1	6.3	44.8	6.7	100.0	
Clerical and sales workers	21.2	4.7	11.9	4.5	23.4	22.7	4.7	2.2	4.8	100.0	
Services workers	10.1	2.3	0	2.0	27.2	4.6	32.0	12.5	9.2	100.0	
Skilled workers	40.0	3.6	26.9	1.0	15.9	0	10.1	1.9	0.6	100.0	
Semiskilled workers	33.8	15.9	10.9	19.8	16.1	0	3.4	0	0.1	100.0	
Unskilled workers	39.8	5.9	21.7	0.2	5.7	0	18.7	0	7.9	100.0	
Total	32.6	5.4	10.7	5.1	12.6	3.7	8.9	16.6	4.3	100.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP											
Professional, semiprofessional, and managerial workers	37.4	7.9			5.6	1.0	23.4	90.2	52.1	33.4	
Clerical and sales workers	9.5	12.5			27.0	89.5	7.6	1.9	16.5	14.6	
Service workers	2.4	3.2			16.4	9.5	27.3	5.8	16.5	7.6	
Skilled workers	22.9	12.5			23.4	0	21.0	2.1	2.6	18.6	
Semiskilled workers	20.1	56.8			24.7	0	7.3	0	0.6	19.4	
Unskilled workers	7.8	7.0			2.9	0	13.4	0	11.8	6.4	
Total	100.0	100.0	(a)	(a)	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 8: May, Industry and Occupation

Job Vacancies, by Industry and Occupation Groups

Occupation Group	Industry Group										Standard Error of Total Number of Vacancies
	Durable Manufacturing	Non-durable Manufacturing	Construction	Public Utilities and Transportation	Trade, Retail and Wholesale	Finance, Insurance, and Real Estate	Services, Other than Education	Education, Public and Private	Government	Total	
	ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	1,085	34	0	12	70	9	262	545	85	2,102	91.3
Clerical and sales workers	441	72	174	55	535	213	131	51	154	1,826	209.0
Service workers	60	12	0	3	328	1	282	89	48	823	157.0
Skilled workers	762	69	470	120	199	0	66	37	8	1,731	263.0
Semiskilled workers	665	242	192	66	57	1	24	0	14	1,261	198.0
Unskilled workers	405	375	0	1	107	0	91	1	53	1,033	191.0
Total, Monroe County	3,418	804	836	257	1,296	224	856	723	362	8,776	463.0
Standard error of total	248.0	129.0	241.0	73.3	223.0	68.4	132.0	15.9	36.4	463.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										
Professional, semiprofessional, and managerial workers	51.6	1.6	0	0.6	3.3	0.4	12.5	25.9	4.0	100.0	
Clerical and sales workers	24.1	3.9	9.5	3.0	29.3	11.7	7.2	2.8	8.4	100.0	
Service workers	7.3	1.5	0	0.4	39.9	0.1	34.3	10.8	5.8	100.0	
Skilled workers	44.0	4.0	27.2	6.9	11.5	0	3.8	2.1	0.5	100.0	
Semiskilled workers	52.7	19.2	15.2	5.2	4.5	0.1	1.9	0	1.1	100.0	
Unskilled workers	39.2	36.3	0	0.1	10.4	0	8.8	0.1	5.1	100.0	
Total	38.9	9.2	9.5	2.9	14.8	2.6	9.7	8.2	4.1	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP										
Professional, semiprofessional, and managerial workers	31.7	4.2	0	4.7	5.4	4.0	30.6	75.4	23.5	23.9	
Clerical and sales workers	12.9	9.0	20.8	21.4	41.3	95.1	15.3	7.1	42.5	20.8	
Service workers	1.8	1.5	0	1.2	25.3	0.4	32.9	12.3	13.3	9.4	
Skilled workers	22.3	8.6	56.2	46.7	15.4	0	7.7	5.1	2.2	19.7	
Semiskilled workers	19.5	30.1	23.0	25.7	4.4	0.4	2.8	0	3.9	14.4	
Unskilled workers	11.8	46.6	0	0.4	8.3	0	10.6	0.1	14.6	11.8	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 8: August, Industry and Occupation

Job Vacancies, by Industry and Occupation Groups

Occupation Group	Industry Group									Total	Standard Error of Total Number of Vacancies
	Durable Manufacturing	Non-durable Manufacturing	Construction	Public Utilities and Transportation	Trade, Retail and Wholesale	Finance, Insurance, and Real Estate	Services, Other than Education	Education, Public and Private	Government		
	ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	1,311	42	0	8	47	4	121	251	93	1,877	65.7
Clerical and sales workers	328	91	52	62	587	172	240	63	138	1,733	230.0
Service workers	60	13	0	3	289	3	215	51	58	692	126.0
Skilled workers	761	101	764	104	249	0	62	5	20	2,066	354.0
Semiskilled workers	760	294	0	2	52	0	84	6	17	1,215	263.0
Unskilled workers	296	516	0	2	60	0	70	10	31	985	129.0
Total, Monroe County	3,516	1,057	816[a]	181[a]	1,284	179	792	386	357	8,568	542.0
Standard error of total	281.0	136.0	304.0	64.7	228.0	39.7	205.0	12.7	54.4	542.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										
Professional, semiprofessional, and managerial workers	69.9	2.2	0	0.4	2.5	0.2	6.4	13.4	5.0	100.0	
Clerical and sales workers	18.9	5.3	3.0	3.6	33.9	9.9	13.8	3.6	8.0	100.0	
Services workers	8.7	1.9	0	0.4	41.8	0.4	31.1	7.4	8.4	100.0	
Skilled workers	36.8	4.9	37.0	5.0	12.1	0	3.0	0.2	1.0	100.0	
Semiskilled workers	62.5	24.2	0	0.2	4.3	0	6.9	0.5	1.4	100.0	
Unskilled workers	30.0	52.4	0	0.2	6.1	0	7.1	1.0	3.1	100.0	
Total	41.0	12.3	9.5	2.1	15.0	2.1	9.2	4.5	4.2	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP										
Professional, semiprofessional, and managerial workers	37.2	4.0		4.4	3.7	2.2	15.3	65.0	26.1	21.9	
Clerical and sales workers	9.3	8.6		34.3	45.7	96.1	30.3	16.3	38.7	20.2	
Service workers	1.7	1.2		1.7	22.5	1.7	27.1	13.2	16.2	8.1	
Skilled workers	21.6	9.6		57.5	19.4	0	7.8	1.3	5.6	24.1	
Semiskilled workers	21.6	27.8		1.1	4.0	0	10.6	1.6	4.8	14.2	
Unskilled workers	8.4	48.8		1.0	4.7	0	8.8	2.6	8.9	11.5	
Total	100.0	100.0	(a)	100.0[a]	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 8a: February, Industry and Occupation, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Industry and Occupation Groups

Occupation Group	Industry Group									
	Durable Manufacturing	Nondurable Manufacturing	Construction	Public Utilities and Transportation	Trade, Retail and Wholesale	Finance, Insurance, and Real Estate	Services, Other than Education	Education, Public and Private	Government	Total
				ESTIMATED NUMBER OF JOB VACANCIES						
Professional, semiprofessional, and managerial workers	867	26	36	0	55	3	105	59	95	1,246
Clerical and sales workers	227	47	110	52	237	177	38	20	56	964
Service workers	60	11	0	12	165	28	160	44	56	536
Skilled workers	531	51	74	6	235	0	146	13	9	1,065
Semiskilled workers	467	245	0	20	156	0	27	0	2	917
Unskilled workers	129	28	110	1	28	0	85	0	40	421
Total, Monroe County	2,281	408	330[c]	91[c]	876	208	561	136	258	5,149
				PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP						
Professional, semiprofessional, and managerial workers	69.6	2.1	2.9	0	4.4	0.2	8.4	4.7	7.6	100.0
Clerical and sales workers	23.5	4.9	11.4	5.4	24.6	18.4	3.9	2.1	5.8	100.0
Service workers	11.2	2.1	0	2.2	30.8	5.2	29.9	8.2	10.4	100.0
Skilled workers	49.9	4.8	6.9	0.6	22.1	0	13.7	1.2	0.8	100.0
Semiskilled workers	50.9	26.7	0	2.2	17.0	0	2.9	0	0.2	100.0
Unskilled workers	30.6	6.7	26.1	0.2	6.7	0	20.2	0	9.5	100.0
Total	44.3	7.9	6.4	1.8	17.0	4.0	10.9	2.6	5.0	100.0
				PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP						
Professional, semiprofessional, and managerial workers	38.0	6.4			6.3	1.4	18.7	43.4	36.8	24.2
Clerical and sales workers	10.0	11.5			27.1	85.1	6.8	14.7	21.7	18.7
Service workers	2.6	2.7			18.8	13.5	28.5	32.4	21.7	10.4
Skilled workers	23.3	12.5			26.8	0	26.0	9.6	3.5	20.7
Semiskilled workers	20.5	60.0			17.8	0	4.8	0	0.8	17.8
Unskilled workers	5.7	6.9			3.2	0	15.2	0	15.5	8.2
Total	100.0	100.0	(c)	(c)	100.0	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1

Table D. 8a: May, Industry and Occupation, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Industry and Occupation Groups

Occupation Group	Industry Group									
	Durable Manufacturing	Nondurable Manufacturing	Construction	Public Utilities and Transportation	Trade, Retail and Wholesale	Finance, Insurance, and Real Estate	Services, Other than Education	Education, Public and Private	Government	Total
	ESTIMATED NUMBER OF JOB VACANCIES									
Professional, semiprofessional, and managerial workers	954	32	0	8	51	8	125	62	85	1,325
Clerical and sales workers	364	60	174	47	502	197	119	28	106	1,597
Service workers	50	11	0	3	276	1	229	52	48	671
Skilled workers	762	69	370	120	199	0	65	19	8	1,612
Semiskilled workers	642	237	192	66	45	1	24	0	14	1,221
Unskilled workers	394	276	0	1	104	0	87	1	53	916
Total, Monroe County	3,166	686	736	245	1,177	207	649	162	314	7,342
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP									
Professional, semiprofessional, and managerial workers	72.0	2.4	0	0.6	3.8	0.6	9.4	4.7	6.4	100.0
Clerical and sales workers	22.8	3.8	10.9	2.9	31.4	12.3	7.5	1.8	6.6	100.0
Service workers	7.5	1.6	0	0.4	41.1	0.1	34.1	7.7	7.2	100.0
Skilled workers	47.3	4.3	23.0	7.4	12.3	0	4.0	1.2	0.5	100.0
Semiskilled workers	52.6	19.4	15.7	5.4	3.7	0.1	2.0	0	1.1	100.0
Unskilled workers	43.0	30.1	0	0.1	11.4	0	9.5	0.1	5.8	100.0
Total	43.1	9.3	10.0	3.3	16.0	2.8	8.8	2.2	4.3	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP									
Professional, semiprofessional, and managerial workers	30.1	4.7	0	3.3	4.3	3.9	19.3	38.3	27.1	18.0
Clerical and sales workers	11.5	8.7	23.6	19.2	42.7	95.2	18.3	17.3	33.8	21.8
Service workers	1.6	1.7	0	1.2	23.4	0.5	35.3	32.1	15.3	9.1
Skilled workers	24.1	10.1	50.3	49.0	16.9	0	10.0	11.7	2.5	22.0
Semiskilled workers	20.3	34.5	26.1	26.9	3.8	0.5	3.7	0	4.5	16.6
Unskilled workers	12.4	40.2	0	0.4	8.8	0	13.4	0.6	16.9	12.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1

Table D. 8a: August, Industry and Occupation, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Industry and Occupation Groups

Occupation Group	Industry Group									
	Durable Manufacturing	Nondurable Manufacturing	Construction	Public Utilities and Transportation	Trade, Retail and Wholesale	Finance, Insurance, and Real Estate	Services, Other than Education	Education, Public and Private	Government	Total
ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	1,218	42	0	8	47	4	79	90	92	1,580
Clerical and sales workers	288	91	52	52	546	125	240	53	126	1,573
Service workers	60	13	0	3	228	3	178	40	47	572
Skilled workers	748	101	514	104	224	0	62	4	20	1,777
Semiskilled workers	756	294	0	2	52	0	28	0	17	1,149
Unskilled workers	278	307	0	2	47	0	70	10	31	745
Total, Monroe County	3,348	848	566[c]	171[c]	1,144	132	657	197	333	7,396
PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										
Professional, semiprofessional, and managerial workers	77.1	2.6	0	0.5	3.0	0.2	5.0	5.7	5.8	100.0
Clerical and sales workers	18.3	5.8	3.3	3.3	34.7	7.9	15.2	3.4	8.0	100.0
Service workers	10.5	2.3	0	0.5	39.9	0.5	31.1	7.0	8.2	100.0
Skilled workers	42.1	5.7	28.9	5.8	12.6	0	3.5	0.2	1.1	100 0
Semiskilled workers	65.8	25.6	0	0.2	4.5	0	2.4	0	1.5	100.0
Unskilled workers	37.3	41.2	0	0.3	6.3	0	9.4	1.3	4.2	100.0
Total	45.3	11.5	7.6	2.3	15.5	1.8	8.9	2.7	4.5	100.0
PER CENT DISTRIBUTION OF VACANCIES FOR EACH INDUSTRY GROUP										
Professional, semiprofessional, and managerial workers	36.4	5.0		4.7	4.1	3.0	12.0	45.7	27.6	21.4
Clerical and sales workers	8.6	10.7		30.4	47.7	94.7	36.5	26.9	37.8	21.2
Service workers	1.8	1.5		1.8	19.9	2.3	27.1	20.3	14.1	7.7
Skilled workers	22.3	11.9		60.8	19.6	0	9.4	2.0	6.0	24.0
Semiskilled workers	22.6	34.7		1.2	4.5	0	4.3	0	5.1	15.5
Unskilled workers	8.3	36.2		1.2	4.1	0	10.6	5.1	9.3	10.1
Total	100.0	100.0	(c)	100.0[c]	100.0	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 9: February, Detailed Occupation and Sex

Job Vacancies, by Detailed Occupation Group and Sex

Occupation Group[a]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Standard Error of Total Number of Vacancies	Per Cent Distribution of Total Number of Vacancies
Professional workers	348	180	1,527	2,055	70.10	25.9
Accountants and auditors	12	0	25	37	0	0.5
Authors, editors, and reporters	13	1	8	22	0	0.3
Chemists	15	1	40	56	2.45	0.7
College faculty	15	0	105	120	32.90	1.5
Engineers	229	0	207	436	12.00	5.5
Chemical	22	0	30	52	0	0.7
Civil	14	0	1	15	0	0.2
Electrical	109	0	34	143	11.50	1.8
Industrial	23	0	36	59	0	0.7
Mechanical	57	0	91	148	3.46	1.9
Physicians and surgeons	1	0	83	84	0	1.1
Social and welfare workers	3	9	28	40	7.68	0.5
Primary and kindergarten teachers	2	88	316	406	42.70	5.1
Secondary teachers and principals	3	12	387	402	43.80	5.1
Teachers, n.e.c.	2	0	110	113	7.62	1.4
Registered nurses	0	66	114	180	0	2.3
Natural scientists	35	1	72	108	0	1.4
Physicists	30	0	38	68	0	0.9
Mathematicians	5	1	15	21	0	0.3
Social scientists	8	0	11	19	0	0.2
Semiprofessional workers	213	6	203	422	13.40	5.3
Draftsmen	73	0	20	93	6.00	1.2
Laboratory technicians	61	6	63	130	2.45	1.6
Computer programmers and systems analysts	12	0	24	36	0	0.5
Physical instructors	0	0	83	83	2.45	1.0
Managers and officials	131	2	46	179	42.70	2.3
Junior executives	16	0	13	29	5.48	0.4
Clerical workers	135	472	148	755	78.10	9.5
General office clerks	8	83	37	128	16.40	1.6
Financial institution clerks	0	41	5	46[a]	27.50	0.6
File clerks	1	13	2	16	2.45	0.2
General industry clerks	12	24	1	37	11.50	0.5
Office machine operators	10	30	4	44	5.48	0.6
Secretaries	1	74	20	95	30.60	1.2
Shipping and receiving clerks	15	1	1	17	2.45	0.2
Stenographers and typists	1	72	30	103	24.20	1.3
Stock clerks	28	3	1	32	2.45	0.4
Telephone operators	0	33	0	33[a]	11.70	0.4

Occupation Group[a]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Standard Error of Total Number of Vacancies	Per Cent Distribution of Total Number of Vacancies
Sales workers	256	36	111	403	119.00	5.1
Insurance salesmen	7	3	90	100[a]	82.20	1.3
Salespersons	86	30	21	137[a]	57.70	1.7
Service workers	239	183	184	606	81.40	7.6
Practical nurses	12	16	63	91	15.9	1.1
Hospital attendants	19	49	13	81	0	1.0
Janitors	72	0	2	74	28.0	0.9
Porters	51	0	0	51	0	0.6
Skilled workers	1,329	61	91	1,481	325.00	18.6
Tailors	11	3	0	14	0	0.2
Machinists	102	0	0	102	27.70	1.3
Tool and die makers	76	0	37	113[a]	64.50	1.4
Machine operators (machine shop)	64	1	4	69	0	0.9
Welders	32	0	0	32[a]	27.50	0.4
Electricians	59	0	0	59	16.40	0.7
Lens grinders and polishers	42	52	0	94	0	1.2
Bricklayers	204	0	0	204[a]	141.00	2.6
Carpenters	124	0	0	124[a]	115.00	1.6
Bus drivers	7	0	17	24	5.48	0.3
Automobile mechanics and repairmen	231	0	0	231[a]	133.00	2.9
Mechanics and repairmen	45	0	1	46	4.90	0.6
Semiskilled workers	1,203	261	75	1,539	360.00	19.4
Hand sewers	1	95	9	105	4.90	1.3
Sewing machine operators	4	26	50	80	0	1.0
Machine operators (machine shop)	171	9	0	180[a]	80.00	2.3
Punch press operators	5	0	4	9	0	0.1
Lens grinders and polishers	20	10	0	30	0	0.4
Photographic material and process workers	16	17	1	34	5.39	0.4
Laundry workers	7	33	7	47[a]	16.80	0.6
Apprentices	153	0	0	153	33.20	1.9
Unskilled workers	404	77	26	507	140.00	6.4
Food products workers	2	8	0	10	0	0.1
Laborers, fabricated metals	0	12	0	12	3.16	0.2
Laborers, professional and scientific apparatus	26	12	0	38	0	0.5
Laborers, laundry	0	21	14	35[a]	24.10	0.4
Laborers, public service	35	0	4	39	11.00	0.5
Hand truckers	75	0	0	75	20.20	0.9
Total, Monroe County	4,258	1,278	2,411	7,947	548.00	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 9: May, Detailed Occupation and Sex

Job Vacancies, by Detailed Occupation Group and Sex

Occupation Group[a]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Standard Error of Total Number of Vacancies	Per Cent Distribution of Total Number of Vacancies
Professional workers	393	145	970	1,508	56.30	17.2
Accountants and auditors	12	0	36	48	0	0.5
Authors, editors, and reporters	6	1	17	24	0	0.3
Chemists	2	0	42	44	0	0.5
College faculty	15	0	70	85	16.40	1.0
Engineers	304	0	227	531	6.00	6.1
Chemical	25	0	24	49	0	0.6
Civil	30	0	0	30	6.00	0.3
Electrical	69	0	121	190	0	2.2
Industrial	70	0	12	82	0	0.9
Mechanical	110	0	66	176	0	2.0
Physicians and surgeons	6	0	6	12	0	0.1
Social and welfare workers	6	10	20	36	8.72	0.4
Primary and kindergarten teachers	0	66	128	194	47.90	2.2
Secondary teachers and principals	6	4	132	142	5.48	1.6
Teachers, n.e.c.	1	0	27	28	0	0.3
Registered nurses	0	61	148	209	24.20	2.4
Natural scientists	8	2	79	89	0	1.0
Physicists	7	0	61	68	0	0.8
Mathematicians	1	0	5	6	0	0.1
Social scientists	19	0	17	36	0	0.4
Semiprofessional workers	148	91	200	439	61.50	5.0
Draftsmen	47	0	32	79	5.48	0.9
Laboratory technicians	44	19	122	185	2.45	2.1
Computer programmers and systems analysts	16	0	27	43	0	0.5
Physical instructors	6	72	0	78[a]	61.20	0.9
Managers and officials	66	16	73	155	11.40	1.8
Junior executives	21	6	26	53	0	0.6
Clerical workers	152	708	343	1,203	124.00	13.7
General office clerks	6	161	142	309	69.10	3.5
Financial institution clerks	4	34	17	55[a]	27.60	0.6
File clerks	1	9	5	15	0	0.2
General industry clerks	24	6	6	36	6.00	0.4
Office machine operators	7	22	30	59	2.45	0.7
Secretaries	0	162	6	168	51.60	1.9
Shipping and receiving clerks	14	2	1	17	5.48	0.2
Stenographers and typists	0	126	24	150	14.10	1.7
Stock clerks	75	3	7	85[a]	30.20	1.0
Telephone operators	0	20	0	20	0	0.2

Occupation Group[a]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Standard Error of Total Number of Vacancies	Per Cent Distribution of Total Number of Vacancies
Sales workers	398	142	83	623	151.00	7.1
Insurance salesmen	65	0	24	89[a]	76.70	1.0
Salespersons	136	112	54	302[a]	104.00	3.4
Service workers	298	364	161	823	157.00	9.4
Practical nurses	1	36	60	97	28.00	1.1
Hospital attendants	17	72	28	117	23.00	1.3
Janitors	44	0	7	51	0	0.6
Porters	68	4	0	72	4.90	0.8
Skilled workers	1,652	32	47	1,731	263.00	19.7
Tailors	10	11	0	21	0	0.2
Machinists	110	0	7	117[a]	54.60	1.3
Tool and die makers	138	0	0	138[a]	51.30	1.6
Machine operators (machine shop)	63	0	5	68	0	0.8
Welders	69	0	0	69[a]	25.60	0.8
Electricians	189	10	0	199[a]	137.00	2.3
Lens grinders and polishers	51	9	0	60	2.45	0.7
Bricklayers	56	0	0	56[a]	55.00	0.6
Carpenters	161	0	0	161[a]	113.00	1.8
Bus drivers	39	0	27	66[a]	26.10	0.8
Automobile mechanics and repairmen	250	0	0	250[a]	122.00	2.8
Mechanics and repairmen	73	0	4	77	13.00	0.9
Semiskilled workers	1,019	204	38	1,261	198.00	14.4
Hand sewers	0	73	0	73	0	0.8
Sewing machine operators	6	38	5	49	0	0.6
Machine operators (machine shop)	188	3	15	206	61.00	2.3
Punch press operators	23	0	0	23	0	0.3
Lens grinders and polishers	46	4	2	52	0	0.6
Photographic material and process workers	8	5	0	13	0	0.1
Laundry workers	6	16	0	22[a]	12.20	0.3
Apprentices	186	0	0	186[a]	82.90	2.1
Unskilled workers	782	249	2	1,033	191.00	11.8
Food products workers	114	47	0	161[a]	60.30	1.8
Laborers, fabricated metals	19	0	0	19	0	0.2
Laborers, professional and scientific apparatus	15	1	0	16	0	0.2
Laborers, laundry	3	20	1	24	12.00	0.3
Laborers, public service	43	0	0	43[a]	21.90	0.5
Hand truckers	202	1	0	203	53.10	2.3
Total, Monroe County	4,908	1,951	1,917	8,776	463.00	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 9: August, Detailed Occupation and Sex

Job Vacancies, by Detailed Occupation Group and Sex

Occupation Group[c]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Standard Error of Total Number of Vacancies	Per Cent Distribution of Total Number of Vacancies
Professional workers	428	108	755	1,291	37.50	15.1
Accountants and auditors	17	0	15	32	0	0.4
Authors, editors, and reporters	7	2	15	24	0	0.3
Chemists	2	0	36	38	0	0.4
College faculty	8	1	45	54	0	0.6
Engineers	328	0	337	665	23.20	7.8
Chemical	18	0	22	40	0	0.5
Civil	23	0	1	24	0	0.3
Electrical	126	0	223	349	23.10	4.1
Industrial	61	0	12	73	2.45	0.9
Mechanical	98	0	78	176	0	2.1
Physicians and surgeons	3	0	0	3	0	(d)
Social and welfare workers	0	3	19	22	2.45	0.3
Primary and kindergarten teachers	12	49	16	77[a]	29.60	0.9
Secondary teachers and principals	2	1	32	35	5.48	0.4
Teachers, n.e.c.	0	0	15	15	0	0.2
Registered nurses	0	46	93	139	0	1.6
Natural scientists	6	4	100	110	0	1.3
Physicists	5	0	77	82	0	1.0
Mathematicians	1	0	12	13	0	0.2
Social scientists	36	0	21	57	0	0.7
Semiprofessional workers	148	10	290	448	35.90	5.2
Draftsmen	65	0	71	136	35.00	1.6
Laboratory technicians	33	8	146	187	3.46	2.2
Computer programmers and systems analysts	17	0	42	59	0	0.7
Physical instructors	9	0	0	9[a]	7.35	0.1
Managers and officials	67	3	68	138	10.10	1.6
Junior executives	18	0	27	45	2.45	0.5
Clerical workers	163	596	344	1,103	155.00	12.9
General office clerks	8	61	103	172	44.30	2.0
Financial institution clerks	2	2	23	27	0	0.3
File clerks	2	12	8	22	2.45	0.3
General industry clerks	27	19	6	52	12.70	0.6
Office machine operators	12	14	42	68	2.45	0.8
Secretaries	0	102	34	136	27.00	1.6
Shipping and receiving clerks	49	14	11	74	16.30	0.9
Stenographers and typists	1	128	11	140	28.80	1.6
Stock clerks	34	2	15	51	7.35	0.6
Telephone operators	0	40	2	42	6.00	0.5

Occupation Group[c]	Estimated Number of Job Vacancies Open to:				Standard Error of Total Number of Vacancies	Per Cent Distribution of Total Number of Vacancies
	Males	Females	Either Sex	Total		
Sales workers	340	209	81	630	165.00	7.4
Insurance salesmen	45	0	33	78[a]	41.20	0.9
Salespersons	159	184	48	391[a]	150.00	4.6
Service workers	310	301	81	692	126.00	8.1
Practical nurses	0	15	47	62	0	0.7
Hospital attendants	21	48	12	81	11.50	0.9
Janitors	49	1	6	56	11.20	0.7
Porters	121	0	0	121	38.90	1.4
Skilled workers	1,964	11	91	2,066	354.00	24.1
Tailors	7	3	20	30	0	0.4
Machinists	160	0	2	162[a]	59.00	1.9
Tool and die makers	97	0	0	97[a]	40.10	1.1
Machine operators (machine shop)	77	2	46	125	11.70	1.5
Welders	105	0	0	105[a]	36.20	1.2
Electricians	90	0	21	111[a]	54.80	1.3
Lens grinders and polishers	3	2	0	5	0	0.1
Bricklayers	0	0	0	0	0	0
Carpenters	419	0	0	419[a]	274.00	4.9
Bus drivers	5	0	1	6	0	0.1
Automobile mechanics and repairmen	360	0	0	360[a]	143.00	4.2
Mechanics and repairmen	114	0	0	114	6.00	1.3
Semiskilled workers	894	184	137	1,215	263.00	14.2
Hand sewers	0	82	10	92	4.90	1.1
Sewing machine operators	5	12	45	62	0	0.7
Machine operators (machine shop)	391	19	40	450[a]	249.00	5.3
Punch press operators	70	1	5	76[a]	40.10	0.9
Lens grinders and polishers	28	4	0	32	0	0.4
Photographic material and process workers	9	12	6	27	2.45	0.3
Laundry workers	15	14	5	34	6.86	0.4
Apprentices	90	0	5	95[a]	36.30	1.1
Unskilled workers	519	455	11	985	129.00	11.5
Food products workers	113	270	0	383	115.00	4.5
Laborers, fabricated metals	33	0	0	33	0	0.4
Laborers, professional and scientific apparatus	1	1	0	2	0	(d)
Laborers, laundry	7	70	0	77[a]	43.10	0.9
Laborers, public service	15	0	0	15	0	0.2
Hand truckers	182	0	0	182	16.80	2.1
Total, Monroe County	4,833	1,877	1,858	8,568	542.00	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 9a: February, Detailed Occupation and Sex, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Detailed Occupation Group and Sex

Occupation Group[a]	Estimated Number of Job Vacancies Open to:				Per Cent Distribution of Total Number of Vacancies
	Males	Females	Either Sex	Total	
Professional workers	265	73	461	799	15.5
Accountants and auditors	9	0	21	30	0.6
Authors, editors and reporters	13	1	8	22	0.4
Chemists	8	1	40	49	1.0
College faculty	0	0	0	0	0.0
Engineers	182	0	202	384	7.6
Chemical	20	0	30	50	1.0
Civil	13	0	1	14	0.2
Electrical	89	0	31	120	2.3
Industrial	17	0	36	53	1.0
Mechanical	41	0	89	130	2.5
Social and welfare workers	3	3	9	15	0.3
Registered nurses	0	65	85	150	2.9
Natural scientists	31	1	68	100	1.9
Social scientists	8	0	8	16	0.3
Semiprofessional workers	172	6	115	293	5.7
Draftsmen	52	0	20	72	1.4
Laboratory technicians	54	6	55	115	2.2
Managers and officials	113	2	39	154	3.0
Clerical workers	132	390	139	661	12.8
General office clerks	8	75	32	115	2.2
Financial institution clerks	0	41	5	46	0.9
File clerks	1	10	2	13	0.3
General industry clerks	12	19	1	32	0.6
Office machine operators	10	26	4	40	0.8
Secretaries	0	35	20	55	1.0
Shipping and receiving clerks	14	1	1	16	0.3
Stenographers and typists	1	61	28	90	1.7
Stock clerks	28	3	1	32	0.6
Telephone operators	0	33	0	33	0.6
Sales workers	244	20	39	303	5.9
Insurance salesmen	7	0	18	25	0.5
Salespersons	86	20	21	127	2.5

Occupation Group[a]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Per Cent Distribution of Total Number of Vacancies
Service workers	217	152	167	536	10.4
Practical nurses	12	16	62	90	1.7
Hospital attendants	17	37	1	55	1.0
Janitors	66	0	1	67	1.3
Porters	51	0	0	51	0.9
Skilled workers	943	46	76	1,065	20.7
Tailors	11	3	0	14	0.2
Machinists	102	0	0	102	2.0
Tool and die makers	76	0	37	113	2.2
Machine operators (machine shop)	56	1	4	61	1.2
Welders	32	0	0	32	0.6
Electricians	59	0	0	59	1.1
Lens grinders and polishers	11	40	0	51	1.0
Carpenters	4	0	0	4	0.1
Bus drivers	2	0	3	5	0.1
Automobile mechanics & repairmen	231	0	0	231	4.4
Mechanics and repairmen	36	0	1	37	0.8
Semiskilled workers	600	243	74	917	17.8
Hand sewers and sewing machine operators	9	127	61	197	3.8
Machine operators (machine shop)	143	9	0	152	3.0
Lens grinders and polishers	20	10	0	30	0.6
Laundry workers	7	15	7	29	0.6
Apprentices	153	0	0	153	2.9
Unskilled workers	340	56	25	421	8.2
Food products workers	0	8	0	8	0.2
Laborers, fabricated metals	0	0	0	0	0.0
Laborers, professional and scientific apparatus	26	12	0	38	0.7
Laborers, laundry	0	12	13	25	0.5
Laborers, public service	35	0	4	39	0.7
Hand truckers	73	0	0	73	1.4
Total, Monroe County	3,026	988	1,135	5,149	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 9a: May, Detailed Occupation and Sex, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Detailed Occupation Group and Sex

Occupation Group[a]	Estimated Number of Job Vacancies Open to:				Per Cent Distribution of Total Number of Vacancies
	Males	Females	Either Sex	Total	
Professional workers	315	57	508	880	12.0
Accountants and auditors	10	0	32	42	0.6
Authors, editors, and reporters	6	1	17	24	0.3
Chemists	1	0	41	42	0.6
College faculty	1	0	0	1	0.0
Engineers	259	0	190	449	6.1
Chemical	17	0	24	41	0.6
Civil	23	0	0	23	0.3
Electrical	68	0	93	161	2.2
Industrial	64	0	12	76	1.0
Mechanical	87	0	58	145	2.0
Social and welfare workers	6	0	7	13	0.2
Registered nurses	0	53	114	167	2.3
Natural scientists	8	2	78	88	1.2
Social scientists	16	14	0	30	0.4
Semiprofessional workers	133	19	172	324	4.4
Draftsmen	46	0	24	70	1.0
Laboratory technicians	40	19	104	163	2.2
Managers and officials	56	8	57	121	1.6
Clerical workers	149	659	213	1,021	13.9
General office clerks	5	142	52	199	2.7
Financial institution clerks	4	33	17	54	0.7
General industry clerks	24	6	5	35	0.5
Office machine operators	7	22	23	52	0.7
Secretaries	0	144	0	144	2.0
Shipping and receiving clerks	14	2	1	17	0.2
Stenographers and typists	0	123	14	137	1.9
Stock clerks	74	3	7	84	1.2
Telephone operators	0	19	0	19	0.3
Sales workers	394	128	54	576	7.8
Insurance salesmen	65	0	12	77	1.0
Salespersons	132	98	39	269	3.7

Occupation Group[a]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Per Cent Distribution of Total Number of Vacancies
Service workers	261	302	108	671	9.1
Practical nurses	1	35	60	96	1.3
Hospital attendants	16	72	13	101	1.4
Janitors	31	0	1	32	0.4
Porters	58	4	0	62	0.8
Skilled workers	1,544	32	36	1,612	22.0
Tailors	10	11	0	21	0.3
Machinists	110	0	7	117	1.6
Tool and die makers	138	0	0	138	1.9
Machine operators (machine shop)	63	0	5	68	0.9
Welders	69	0	0	69	0.9
Electricians	189	10	0	199	2.7
Lens grinders and polishers	51	9	0	60	0.8
Carpenters	60	0	0	60	0.8
Bus drivers	34	0	16	50	0.7
Automobile mechanics & repairmen	250	0	0	250	3.4
Mechanics and repairmen	72	0	4	76	1.0
Semiskilled workers	984	204	33	1,221	16.6
Hand sewers and sewing machine operators	8	116	5	129	1.8
Machine operators (machine shop)	171	3	10	184	2.5
Lens grinders and polishers	46	4	2	52	0.7
Laundry workers	6	16	0	22	0.3
Apprentices	186	0	0	186	2.5
Unskilled workers	699	216	1	916	12.5
Food products workers	75	47	0	122	1.7
Laborers, fabricated metals	19	0	0	19	0.3
Laborers, professional and scientific apparatus	15	1	0	16	0.2
Laborers, laundry	3	20	0	23	0.3
Laborers, public service	43	0	0	43	0.6
Hand truckers	162	1	0	163	2.2
Total, Monroe County	4,535	1,625	1,182	7,342	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 9a: August, Detailed Occupation and Sex, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Detailed Occupation Group and Sex

Occupation Group[a]	Estimated Number of Job Vacancies Open to:				Per Cent Distribution of Total Number of Vacancies
	Males	Females	Either Sex	Total	
Professional workers	384	52	603	1,039	14.0
Accountants and auditors	17	0	14	31	0.4
Authors, editors and reporters	7	2	15	24	0.3
Chemists	1	0	35	36	0.5
College faculty	3	0	24	27	0.4
Engineers	309	0	308	617	8.3
Chemical	17	0	22	39	0.5
Civil	17	0	0	17	0.2
Electrical	126	0	200	326	4.4
Industrial	55	0	11	66	0.9
Mechanical	92	0	74	166	2.2
Social and welfare workers	0	0	10	10	0.1
Registered nurses	0	44	74	118	1.6
Natural scientists	6	4	99	109	1.5
Social scientists	35	0	16	51	0.7
Semiprofessional workers	138	10	261	409	5.5
Draftsmen	65	0	70	135	1.8
Laboratory technicians	33	8	127	168	2.3
Managers and officials	63	3	66	132	1.8
Clerical workers	144	547	322	1,013	13.7
General office clerks	8	55	95	158	2.1
Financial institution clerks	2	2	23	27	0.4
File clerks	2	12	8	22	0.3
General industry clerks	26	18	6	50	0.7
Office machine operators	12	14	38	64	0.9
Secretaries	0	83	28	111	1.5
Shipping and receiving clerks	43	9	9	61	0.8
Stenographers and typists	1	126	9	136	1.8
Stock clerks	30	1	15	46	0.6
Telephone operators	0	30	2	32	0.4
Sales workers	311	198	51	560	7.6
Insurance salesmen	16	0	3	19	0.3
Salespersons	159	174	48	381	5.2

Occupation Group[a]	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total	Per Cent Distribution of Total Number of Vacancies
Service workers	296	219	57	572	7.7
Practical nurses	0	15	47	62	0.8
Hospital attendants	19	48	2	69	0.9
Janitors	47	1	5	53	0.7
Porters	121	0	0	121	1.6
Skilled workers	1,676	11	90	1,777	24.0
Tailors	6	3	20	29	0.4
Machinists	160	0	2	162	2.1
Tool and die makers	97	0	0	97	1.3
Machine operators (machine shop)	77	2	46	125	1.7
Welders	93	0	0	93	1.3
Electricians	90	0	21	111	1.5
Lens grinders and polishers	3	2	0	5	0.1
Carpenters	169	0	0	169	2.3
Bus drivers	5	0	0	5	0.1
Automobile mechanics & repairmen	336	0	0	336	4.5
Mechanics and repairmen	114	0	0	114	1.5
Semiskilled workers	834	178	137	1,149	15.5
Hand sewers and sewing machine operators	5	105	61	171	2.3
Machine operators (machine shop)	387	19	40	446	6.0
Lens grinders and polishers	28	4	0	32	0.4
Laundry workers	15	14	5	34	0.5
Apprentices	90	0	5	95	1.3
Unskilled workers	468	266	11	745	10.1
Food products workers	93	90	0	183	2.5
Laborers, fabricated metals	30	0	0	30	0.4
Laborers, laundry	7	70	0	77	1.0
Laborers, public service	15	0	0	15	0.2
Hand truckers	158	0	0	158	2.1
Total, Monroe County	4,314	1,484	1,598	7,396	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.10: February, Occupation and Starting Date

Job Vacancies, by Occupation Group and Starting Date

Occupation Group	Starting Date											Standard Error of Total Number of Vacancies
	Immediately	Later in February 1965	March	April	May	June	July	August	September	October 1965 or Later	Total	
	ESTIMATED NUMBER OF JOB VACANCIES											
Professional, semiprofessional, and managerial workers	1,246	74	45	26	4	119	125	1	1,014	2	2,656	92.9
Clerical and sales workers	964	50	88	46	2	2	1	0	5	0	1,158	145.0
Service workers	536	23	15	0	0	0	0	0	32	0	606	81.4
Skilled workers	1,065	14	33	99	251	4	0	0	15	0	1,481	325.0
Semiskilled workers	917	81	65	308	168	0	0	0	0	0	1,539	360.0
Unskilled workers	421	26	60	0	0	0	0	0	0	0	507	140.0
Total, Monroe County	5,149	268	306[a]	479[a]	425[a]	125	126	1[b]	1,066	2[b]	7,947	548.0
Standard error of total	353.0	52.7	123.0	305.0	283.0	0	0	0	82.4	0	548.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP											
Professional, semiprofessional, and managerial workers	46.9	2.8	1.7	1.0	0.2	4.5	4.7	(d)	38.2	0.1	100.0	
Clerical and sales workers	83.2	4.3	7.6	4.0	0.2	0.2	0.1	0	0.4	0	100.0	
Service workers	88.4	3.8	2.5	0	0	0	0	0	5.3	0	100.0	
Skilled workers	71.9	0.9	2.2	6.7	16.9	0.3	0	0	1.0	0	100.0	
Semiskilled workers	59.6	5.3	4.2	20.0	10.9	0	0	0	0	0	100.0	
Unskilled workers	83.0	5.1	11.8	0	0	0	0	0	0	0	100.0	
Total	64.8	3.4	3.9	6.0	5.3	1.6	1.6	(d)	13.4	(d)	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE											
Professional, semiprofessional, and managerial workers	24.2	27.6	14.7			95.2	99.2		95.1		33.4	
Clerical and sales workers	18.7	18.7	28.8			1.6	0.8		0.5		14.6	
Service workers	10.4	8.6	4.9			0	0		3.0		7.6	
Skilled workers	20.7	5.2	10.8			3.2	0		1.4		18.6	
Semiskilled workers	17.8	30.2	21.2			0	0		0		19.4	
Unskilled workers	8.2	9.7	19.6			0	0		0		6.4	
Total	100.0	100.0	100.0[a]	(a)	(a)	100.0	100.0	(b)	100.0	(b)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D.10: May, Occupation and Starting Date

Job Vacancies, by Occupation Group and Starting Date

Occupation Group	Starting Date								Standard Error of Total Number of Vacancies
	Immediately	Later in May 1965	June	July	August	September	October 1965 or Later	Total	
	ESTIMATED NUMBER OF JOB VACANCIES								
Professional, semiprofessional, and managerial workers	1,325	55	67	189	24	418	24	2,102	91.3
Clerical and sales workers	1,597	25	93	80	1	29	1	1,826	209.0
Service workers	671	20	95	11	0	26	0	823	157.0
Skilled workers	1,612	2	100	1	0	16	0	1,731	263.0
Semiskilled workers	1,221	22	18	0	0	0	0	1,261	198.0
Unskilled workers	916	26	61	27	3	0	0	1,033	191.0
Total, Monroe County	7,342	150	434	308	28[a,b]	489	25[b]	8,776	463.0
Standard error of total	445.00	5.39	117.00	76.80	11.70	52.40	0	463.00	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP								
Professional, semiprofessional, and managerial workers	63.0	2.6	3.2	9.0	1.1	19.9	1.1	100.0	
Clerical and sales workers	87.5	1.4	5.1	4.4	0.1	1.6	0.1	100.0	
Service workers	81.5	2.4	11.5	1.3	0	3.2	0	100.0	
Skilled workers	93.1	0.1	5.8	0.1	0	0.9	0	100.0	
Semiskilled workers	96.8	1.7	1.4	0	0	0	0	100.0	
Unskilled workers	88.7	2.5	5.9	2.6	0.3	0	0	100.0	
Total	83.7	1.7	4.9	3.5	0.3	5.6	0.3	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE								
Professional, semiprofessional, and managerial workers	18.0	36.7	15.4	61.4		85.5		24.0	
Clerical and sales workers	21.8	16.7	21.4	26.0		5.9		20.8	
Service workers	9.1	13.3	21.9	3.6		5.3		9.4	
Skilled workers	22.0	1.3	23.0	0.3		3.3		19.7	
Semiskilled workers	16.6	14.7	4.1	0		0		14.4	
Unskilled workers	12.5	17.3	14.1	8.8		0		11.8	
Total	100.0	100.0	100.0	100.0	(a,b)	100.0	(b)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D.10: August, Occupation and Starting Date

Job Vacancies, by Occupation Group and Starting Date

Occupation Group	Starting Date					Standard Error of Total Number of Vacancies
	Immediately	Later in August 1965	September	October 1965 or later	Total	
	ESTIMATED NUMBER OF JOB VACANCIES					
Professional, semiprofessional, and managerial workers	1,580	52	206	39	1,877	65.7
Clerical and sales workers	1,573	38	110	12	1,733	230.0
Service workers	572	34	86	0	692	126.0
Skilled workers	1,777	8	257	24	2,066	354.0
Semiskilled workers	1,149	4	6	56	1,215	263.0
Unskilled workers	745	16	222	2	985	129.0
Total, Monroe County	7,396	152	887	133[a]	8,568	542.0
Standard error of total	487.0	14.7	259.0	59.7	542.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP					
Professional, semiprofessional, and managerial workers	84.2	2.8	11.0	2.1	100.0	
Clerical and sales workers	90.8	2.2	6.3	0.7	100.0	
Service workers	82.7	4.9	12.4	0	100.0	
Skilled workers	86.0	0.4	12.4	1.2	100.0	
Semiskilled workers	94.6	0.3	0.5	4.6	100.0	
Unskilled workers	75.6	1.6	22.5	0.2	100.0	
Total	86.3	1.8	10.4	1.6	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE					
Professional, semiprofessional, and managerial workers	21.4	34.2	23.2		21.9	
Clerical and sales workers	21.3	25.0	12.4		20.2	
Service workers	7.7	22.4	9.7		8.1	
Skilled workers	24.0	5.3	29.0		24.1	
Semiskilled workers	15.5	2.6	0.7		14.2	
Unskilled workers	10.1	10.5	25.0		11.5	
Total	100.0	100.0	100.0	(a)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D.11: February, Occupation and Education

Job Vacancies, by Occupation Group and Minimum Education Requirement

Occupation Group	Years of Schooling Required 0	1—7	8	9—11	12	13—15	16	17—19	20	Total	Standard Error of Total Number of Vacancies
	ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	0	0	0	31	249	425	1,639	130	182	2,656	92.9
Clerical and sales workers	0	29	32	107	856	73	61	0	0	1,158	145.0
Service workers	35	176	104	86	129	71	5	0	0	606	81.4
Skilled workers	13	358	479	123	456	51	1	0	0	1,481	325.0
Semiskilled workers	183	72	129	640	514	1	0	0	0	1,539	360.0
Unskilled workers	104	102	150	97	54	0	0	0	0	507	140.0
Total, Monroe County	335	737	894[a]	1,084	2,258	621	1,706	130	182	7,947	548.0
Standard error of total	63.3	185.0	299.0	314.0	232.0	39.7	84.6	33.0	0	548.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										Median Years of Schooling
Professional, semiprofessional, and managerial workers	0	0	0	1.2	9.4	16.0	61.7	4.9	6.9	100.0	16
Clerical and sales workers	0	2.5	2.8	9.2	73.9	6.3	5.3	0	0	100.0	12
Service workers	5.8	29.0	17.2	14.2	21.3	11.7	0.8	0	0	100.0	8
Skilled workers	0.9	24.2	32.3	8.3	30.8	3.4	0.1	0	0	100.0	8
Semiskilled workers	11.9	4.7	8.4	41.6	33.4	0.1	0	0	0	100.0	10
Unskilled workers	20.5	20.1	29.6	19.1	10.7	0	0	0	0	100.0	8
Total	4.2	9.3	11.3	13.6	28.4	7.8	21.5	1.6	2.3	100.0	12
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING										
Professional, semiprofessional, and managerial workers	0	0	0	2.9	11.0	68.4	96.1	100.0	100.0	33.4	
Clerical and sales workers	0	3.9	3.6	9.9	37.9	11.8	3.6	0	0	14.6	
Service workers	10.4	23.9	11.6	7.9	5.7	11.4	0.3	0	0	7.6	
Skilled workers	3.9	48.6	53.6	11.3	20.2	8.2	0.1	0	0	18.6	
Semiskilled workers	54.6	9.8	14.4	59.0	22.8	0.2	0	0	0	19.4	
Unskilled workers	31.0	13.8	16.8	8.9	2.4	0	0	0	0	6.4	
Total	100.0	100.0	100.0[a]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 11: May, Occupation and Education

Job Vacancies, by Occupation Group and Minimum Education Requirement

Occupation Group	Years of Schooling Required										Standard Error of Total Number of Vacancies
	0	1—7	8	9—11	12	13—15	16	17—19	20	Total	
	ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	0	0	2	4	249	434	1,175	123	115	2,102	91.3
Clerical and sales workers	2	34	51	222	1,396	114	7	0	0	1,826	209.0
Service workers	85	147	119	145	243	84	0	0	0	823	157.0
Skilled workers	55	246	371	86	943	29	1	0	0	1,731	263.0
Semiskilled workers	127	158	294	157	518	7	0	0	0	1,261	198.0
Unskilled workers	250	90	379	156	158	0	0	0	0	1,033	191.0
Total, Monroe County	519	675	1,216	770	3,507	668	1,183	123	115	8,776	463.0
Standard error of total	112.0	184.0	242.0	142.0	329.0	71.2	383.0	18.0	0	463.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										Median Years of Schooling
Professional, semiprofessional, and managerial workers	0	0	0.1	0.2	11.8	20.6	55.9	5.9	5.5	100.0	16
Clerical and sales workers	0.1	1.9	2.8	12.2	76.5	6.2	0.4	0	0	100.0	12
Service workers	10.3	17.9	14.5	17.6	29.5	10.2	0	0	0	100.0	10
Skilled workers	3.2	14.2	21.4	5.0	54.5	1.7	0.1	0	0	100.0	12
Semiskilled workers	10.1	12.5	23.3	12.5	41.1	0.6	0	0	0	100.0	10
Unskilled workers	24.2	8.7	36.7	15.1	15.3	0	0	0	0	100.0	8
Total	5.9	7.7	13.9	8.8	40.0	7.6	13.5	1.4	1.3	100.0	12
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING										
Professional, semiprofessional, and managerial workers	0	0	0.2	0.5	7.1	65.0	99.3	100.0	100.0	24.0	
Clerical and sales workers	0.4	5.0	4.2	28.8	39.8	17.1	0.6	0	0	20.8	
Service workers	16.4	21.8	9.8	18.8	6.9	12.6	0	0	0	9.4	
Skilled workers	10.6	36.4	30.5	11.2	26.9	4.3	0.1	0	0	19.7	
Semiskilled workers	24.5	23.4	24.2	20.4	14.8	1.0	0	0	0	14.4	
Unskilled workers	48.2	13.3	31.2	20.3	4.5	0	0	0	0	11.8	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 11: August, Occupation and Education

Job Vacancies, by Occupation Group and Minimum Education Requirement

Occupation Group	Years of Schooling Required										Standard Error of Total Number of Vacancies
	0	1—7	8	9—11	12	13—15	16	17—19	20	Total	
	ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	0	0	1	5	199	463	1,056	52	101	1,877	65.7
Clerical and sales workers	2	18	150	276	1,225	50	12	0	0	1,733	230.0
Service workers	34	169	190	119	118	62	0	0	0	692	126.0
Skilled workers	43	231	725	228	794	45	0	0	0	2,066	354.0
Semiskilled workers	72	98	237	457	349	2	0	0	0	1,215	263.0
Unskilled workers	66	281	319	167	152	0	0	0	0	985	129.0
Total, Monroe County	217	797	1,622	1,252	2,837	622	1,068	52[b]	101	8,568	542.0
Standard error of total	69.70	153.00	336.00	295.00	249.00	32.30	25.20	2.45	0	542.00	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										Median Years of Schooling
Professional, semiprofessional, and managerial workers	0	0	0.1	0.3	10.6	24.7	56.3	2.8	5.4	100.0	16
Clerical and sales workers	0.1	1.0	8.7	15.9	70.7	2.9	0.7	0	0	100.0	12
Service workers	4.9	24.4	27.5	17.2	17.1	9.0	0	0	0	100.0	8
Skilled workers	2.1	11.2	35.1	11.0	38.4	2.2	0	0	0	100.0	9
Semiskilled workers	5.9	8.1	19.5	37.6	28.7	0.2	0	0	0	100.0	10
Unskilled workers	6.7	28.5	32.4	17.0	15.4	0	0	0	0	100.0	8
Total	2.5	9.3	18.9	14.6	33.1	7.3	12.5	0.6	1.2	100.0	12
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING										
Professional, semiprofessional, and managerial workers	0	0	0.1	0.4	7.0	74.4	98.9		100.0	21.9	
Clerical and sales workers	0.9	2.3	9.2	22.0	43.2	8.0	1.1		0	20.2	
Service workers	15.7	21.2	11.7	9.5	4.2	10.0	0		0	8.1	
Skilled workers	19.8	29.0	44.7	18.2	28.0	7.2	0		0	24.1	
Semiskilled workers	33.2	12.3	14.6	36.5	12.3	0.3	0		0	14.2	
Unskilled workers	30.4	35.3	19.7	13.3	5.4	0	0		0	11.5	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(b)	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 11a: February, Occupation and Education, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Occupation Group and Minimum Education Requirement

Occupation Group	Years of Schooling Required: 0	1–7	8	9–11	12	13–15	16	17–19	20	Total	Median Years of Schooling
ESTIMATED NUMBER OF JOB VACANCIES											
Professional, semiprofessional, and managerial workers	0	0	0	7	215	304	637	51	32	1,246	
Clerical and sales workers	0	29	31	92	678	73	61	0	0	964	
Service workers	33	155	86	73	114	70	5	0	0	536	
Skilled workers	10	260	239	120	390	45	1	0	0	1,065	
Semiskilled workers	183	44	117	232	340	1	0	0	0	917	
Unskilled workers	104	30	148	86	53	0	0	0	0	421	
Total, Monroe County	330	518	621[c]	610	1,790	493	704	51[b]	32[b]	5,149	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP											
Professional, semiprofessional, and managerial workers	0	0	0	0.6	17.3	24.4	51.1	4.1	2.6	100.0	16
Clerical and sales workers	0	3.0	3.2	9.5	70.3	7.6	6.3	0	0	100.0	12
Service workers	6.2	28.9	16.0	13.6	21.3	13.1	0.9	0	0	100.0	10
Skilled workers	0.9	24.4	22.4	11.3	36.6	4.2	0.1	0	0	100.0	10
Semiskilled workers	20.0	4.8	12.8	25.3	37.1	0.1	0	0	0	100.0	10
Unskilled workers	24.7	7.1	35.2	20.4	12.6	0	0	0	0	100.0	8
Total	6.4	10.1	12.1	11.8	34.8	9.6	13.7	1.0	0.6	100.0	12
PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING											
Professional, semiprofessional, and managerial workers	0	0	0	1.1	12.0	61.7	90.5			24.2	
Clerical and sales workers	0	5.6	5.0	15.1	37.9	14.8	8.7			18.7	
Service workers	10.0	29.9	13.8	12.0	6.4	14.2	0.7			10.4	
Skilled workers	3.0	50.2	38.5	19.7	21.8	9.1	0.1			20.7	
Semiskilled workers	55.5	8.5	18.8	38.0	19.0	0.2	0			17.8	
Unskilled workers	31.5	5.8	23.8	14.1	3.0	0	0			8.2	
Total	100.0	100.0	100.0[c]	100.0	100.0	100.0	100.0	(b)	(b)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 11a: May, Occupation and Education, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Occupation Group and Minimum Education Requirement

Occupation Group	Years of Schooling Required										
	0	1–7	8	9–11	12	13–15	16	17–19	20	Total	
	ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	0	0	2	3	157	327	736	47	53	1,325	
Clerical and sales workers	1	34	51	204	1,189	111	7	0	0	1,597	
Service workers	59	100	110	145	173	84	0	0	0	671	
Skilled workers	48	246	370	85	833	29	1	0	0	1,612	
Semiskilled workers	127	158	294	145	490	7	0	0	0	1,221	
Unskilled workers	246	90	379	96	105	0	0	0	0	916	
Total, Monroe County	481	628	1,206	678	2,947	558	744	47[b]	53[b]	7,342	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										Median Years of Schooling
Professional, semiprofessional, and managerial workers	0	0	0.2	0.2	11.8	24.7	55.5	3.5	4.0	100.0	16
Clerical and sales workers	0.1	2.1	3.2	12.8	74.5	6.9	0.4	0	0	100.0	12
Service workers	8.8	14.9	16.4	21.6	25.8	12.5	0	0	0	100.0	10
Skilled workers	3.0	15.3	23.0	5.3	51.7	1.8	0.1	0	0	100.0	12
Semiskilled workers	10.4	12.9	24.1	11.9	40.1	0.6	0	0	0	100.0	10
Unskilled workers	26.9	9.8	41.4	10.5	11.5	0	0	0	0	100.0	8
Total	6.6	8.6	16.4	9.2	40.1	7.6	10.1	0.6	0.7	100.0	12
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING										
Professional, semiprofessional, and managerial workers	0	0	0.2	0.4	5.3	58.6	98.9			18.0	
Clerical and sales workers	0.2	5.4	4.2	30.1	40.3	19.9	0.9			21.8	
Service workers	12.3	15.9	9.1	21.4	5.9	15.1	0			9.1	
Skilled workers	10.0	39.2	30.7	12.5	28.3	5.2	0.1			22.0	
Semiskilled workers	26.4	25.2	24.4	21.4	16.6	1.3	0			16.6	
Unskilled workers	51.1	14.3	31.4	14.2	3.6	0	0			12.5	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(b)	(b)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 11a: August, Occupation and Education, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Occupation Group and Minimum Education Requirement

Occupation Group	Years of Schooling Required										
	0	1–7	8	9–11	12	13–15	16	17–19	20	Total	
	ESTIMATED NUMBER OF JOB VACANCIES										
Professional, semiprofessional, and managerial workers	0	0	1	5	184	363	910	36	81	1,580	
Clerical and sales workers	2	18	123	270	1,109	39	12	0	0	1,573	
Service workers	27	169	86	113	115	62	0	0	0	572	
Skilled workers	42	231	475	216	768	45	0	0	0	1,777	
Semiskilled workers	72	98	237	395	345	2	0	0	0	1,149	
Unskilled workers	66	73	306	156	144	0	0	0	0	745	
Total, Monroe County	209	589	1,228	1,155	2,665	511	922	36[b]	81	7,396	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP										Median Years of Schooling
Professional, semiprofessional, and managerial workers	0	0	0.1	0.3	11.6	23.0	57.6	2.3	5.1	100.0	16
Clerical and sales workers	0.1	1.1	7.8	17.2	70.5	2.5	0.8	0	0	100.0	12
Service workers	4.7	29.5	15.0	19.8	20.1	10.8	0	0	0	100.0	8
Skilled workers	2.4	13.0	26.7	12.2	43.2	2.5	0	0	0	100.0	10
Semiskilled workers	6.3	8.5	20.6	34.4	30.0	0.2	0	0	0	100.0	10
Unskilled workers	8.9	9.8	41.1	20.9	19.3	0	0	0	0	100.0	8
Total	2.8	8.0	16.6	15.6	36.0	6.9	12.5	0.5	1.1	100.0	12
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING										
Professional, semiprofessional, and managerial workers	0	0	0.1	0.4	6.9	71.0	98.7		100.0	21.4	
Clerical and sales workers	1.0	3.1	10.0	23.4	41.6	7.6	1.3		0	21.3	
Service workers	12.9	28.7	7.0	9.8	4.3	12.1	0		0	7.7	
Skilled workers	20.1	39.2	38.7	18.7	28.8	8.8	0		0	24.0	
Semiskilled workers	34.4	16.6	19.3	34.2	12.9	0.4	0		0	15.5	
Unskilled workers	13.6	12.4	24.9	13.5	5.4	0	0		0	10.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(b)	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 11b: February, Detailed Occupation and Education

Job Vacancies, by Detailed Occupation Group and Minimum Education Requirement

Occupation Group[a]	Years of Schooling Required: Less than 8	8	9–11	12	13 or More	Total	Standard Error of Total Number of Vacancies
	ESTIMATED NUMBER OF JOB VACANCIES						
Professional workers	0	0	24	10	2,021	2,055	70.10
College faculty	0	0	0	0	120	120	32.90
Engineers	0	0	0	7	429	436	12.00
Electrical	0	0	0	0	143	143	11.50
Industrial	0	0	0	0	59	59	0
Mechanical	0	0	0	6	142	148	3.46
Primary and kindergarten teachers	0	0	24	0	382	406	42.70
Secondary teachers and principals	0	0	0	0	402	402	43.80
Registered nurses	0	0	0	0	180	180	0
Natural scientists	0	0	0	0	108	108	0
Semiprofessional workers	0	0	1	157	264	422	13.40
Draftsmen	0	0	1	61	31	93	6.00
Laboratory technicians	0	0	0	57	73	130	2.45
Physical instructors	0	0	0	3	80	83	2.45
Managers and officials	0	0	6	82	91	179	42.70
Clerical workers	29	5	28	614	79	755	78.10
General office clerks	0	0	6	122	0	128	16.40
Secretaries	0	0	0	83	12	95	30.60
Stenographers and typists	0	0	1	95	7	103	24.20
Stock clerks	0	3	2	25	2	32	2.45
Sales workers	0	27	79	242	55	403	119.00
Insurance salesmen	0	0	0	99	1	100[a]	82.20
Salespersons	0	15	32	90	0	137[a]	57.70
Service workers	211	104	86	129	76	606	81.40
Practical nurses	0	0	15	12	64	91	15.90
Hospital attendants	0	0	36	44	1	81	0
Porters	3	10	17	21	0	51	0
Skilled workers	371	479	123	456	52	1,481	325.00
Machinists	0	1	36	65	0	102	27.70
Tool and die makers	68	1	31	12	1	113[a]	64.50
Machine operators (machine shop)	0	5	19	42	3	69	0
Welders	0	29	2	1	0	32[a]	27.50
Electricians	0	0	1	38	20	59	16.40
Lens grinders and polishers	1	0	0	92	1	94	0
Bricklayers	84	120	0	0	0	204[a]	141.00
Carpenters	0	120	1	3	0	124[a]	115.00
Semiskilled workers	255	129	640	514	1	1,539	360.00
Hand sewers	98	0	1	6	0	105	4.90
Sewing machine operators	77	3	0	0	0	80	0
Machine operators (machine shop)	2	70	35	73	0	180[a]	80.00
Apprentices	18	1	1	133	0	153	33.20
Unskilled workers	206	150	97	54	0	507	140.00
Food products workers	0	2	8	0	0	10	0
Hand truckers	0	6	30	39	0	75	20.20
Total, Monroe County	1,072	894	1,084	2,258	2,639	7,947	548.00

Explanatory notes and footnotes precede Table D.1.

Table D. 11b: May, Detailed Occupation and Education

Job Vacancies, by Detailed Occupation Group and Minimum Education Requirement

Occupation Group[a]	Years of Schooling Required: Less than 8	8	9–11	12	13 or More	Total	Standard Error of Total Number of Vacancies
	ESTIMATED NUMBER OF JOB VACANCIES						
Professional workers	0	0	0	1	1,507	1,508	56.30
College faculty	0	0	0	0	85	85	16.40
Engineers	0	0	0	0	531	531	6.00
Electrical	0	0	0	0	190	190	0
Industrial	0	0	0	0	82	82	0
Mechanical	0	0	0	0	176	176	0
Primary and kindergarten teachers	0	0	0	0	194	194	47.90
Secondary teachers and principals	0	0	0	0	142	142	5.48
Registered nurses	0	0	0	0	209	209	24.20
Natural scientists	0	0	0	0	89	89	0
Semiprofessional workers	0	0	4	196	239	439	61.50
Draftsmen	0	0	0	47	32	79	5.48
Laboratory technicians	0	0	1	46	138	185	2.45
Physical instructors	0	0	0	75	3	78[a]	61.20
Managers and officials	0	2	0	52	101	155	11.40
Clerical workers	35	19	149	947	53	1,203	124.00
General office clerks	0	0	19	287	3	309	69.10
Secretaries	0	0	5	142	21	168	51.60
Stenographers and typists	0	0	6	142	2	150	14.10
Stock clerks	1	4	21	59	0	85[a]	30.20
Sales workers	1	32	73	449	68	623	151.00
Insurance salesmen	0	0	0	89	0	89[a]	76.70
Salespersons	1	4	51	246	0	302[a]	104.00
Service workers	232	119	145	243	84	823	157.00
Practical nurses	0	0	1	15	81	97	28.00
Hospital attendants	26	0	49	41	1	117	23.00
Porters	18	6	27	21	0	72	4.90
Skilled workers	301	371	86	943	30	1,731	263.00
Machinists	0	59	3	54	1	117[a]	54.60
Tool and die makers	0	0	0	137	1	138[a]	51.30
Machine operators (machine shop)	0	1	7	55	5	68	0
Welders	0	34	3	32	0	69[a]	25.60
Electricians	0	1	0	188	10	199[a]	137.00
Lens grinders and polishers	0	0	0	57	3	60	2.45
Bricklayers	0	0	56	0	0	56[a]	55.00
Carpenters	1	56	1	103	0	161[a]	113.00
Semiskilled workers	285	294	157	518	7	1,261	198.00
Hand sewers	73	0	0	0	0	73	0
Sewing machine operators	49	0	0	0	0	49	0
Machine operators (machine shop)	0	3	82	114	7	206	61.00
Apprentices	0	0	7	179	0	186[a]	82.90
Unskilled workers	340	379	156	158	0	1,033	191.00
Food products workers	35	75	10	41	0	161[a]	60.30
Hand truckers	6	41	89	67	0	203	53.10
Total, Monroe County	1,194	1,216	770	3,507	2,089	8,776	463.00

Explanatory notes and footnotes precede Table D.1.

Table D. 11b: August, Detailed Occupation and Education

Job Vacancies, by Detailed Occupation Group and Minimum Education Requirement

Occupation Group[a]	Years of Schooling Required: Less than 8	8	9–11	12	13 or More	Total	Standard Error of Total Number of Vacancies
	ESTIMATED NUMBER OF JOB VACANCIES						
Professional workers	0	0	0	5	1,286	1,291	37.50
College faculty	0	0	0	0	54	54	0
Engineers	0	0	0	0	665	665	23.20
Electrical	0	0	0	0	349	349	23.10
Industrial	0	0	0	0	73	73	2.45
Mechanical	0	0	0	0	176	176	0
Primary and kindergarten teachers	0	0	0	0	77	77[a]	29.60
Secondary teachers and principals	0	0	0	0	35	35	5.48
Registered nurses	0	0	0	0	139	139	0
Natural scientists	0	0	0	0	110	110	0
Semiprofessional workers	0	1	4	171	272	448	35.90
Draftsmen	0	0	0	92	44	136	35.00
Laboratory technicians	0	0	0	48	139	187	3.46
Physical instructors	0	0	0	6	3	9[a]	7.35
Managers and officials	0	0	1	23	114	138	10.10
Clerical workers	8	79	73	902	41	1,103	155.00
General office clerks	0	0	0	172	0	172	44.30
Secretaries	0	0	6	110	20	136	27.00
Stenographers and typists	0	0	0	135	5	140	28.80
Stock clerks	2	10	8	24	7	51	7.35
Sales workers	12	71	203	323	21	630	165.00
Insurance salesmen	0	24	0	54	0	78[a]	41.20
Salespersons	0	47	172	171	1	391[a]	150.00
Service workers	203	190	119	118	62	692	126.00
Practical nurses	0	0	0	7	55	62	0
Hospital attendants	1	9	0	70	1	81	11.50
Porters	54	34	15	18	0	121	38.90
Skilled workers	274	725	228	794	45	2,066	354.00
Machinists	0	5	5	152	0	162	59.00
Tool and die makers	0	7	24	66	0	97[a]	40.10
Machine operators (machine shop)	0	2	18	98	7	125	11.70
Welders	0	43	28	34	0	105[a]	36.20
Electricians	1	2	3	79	26	111[a]	54.80
Lens grinders and polishers	0	0	0	5	0	5	0
Bricklayers	0	0	0	0	0	0	0
Carpenters	1	358	57	3	0	419	274.00
Semiskilled workers	170	237	457	349	2	1,215	263.00
Hand sewers	45	37	0	10	0	92	4.90
Sewing machine operators	22	25	5	10	0	62	0
Machine operators (machine shop)	0	28	286	136	0	450[a]	249.00
Apprentices	26	12	0	57	0	95[a]	36.30
Unskilled workers	347	319	167	152	0	985	129.00
Food products workers	237	128	16	2	0	383	115.00
Hand truckers	5	37	33	107	0	182	16.80
Total, Monroe County	1,014	1,622	1,252	2,837	1,843	8,568	542.00

Explanatory notes and footnotes precede Table D.1.

Table D. 12: February, Occupation and Experience

Job Vacancies, by Occupation Group and Minimum Experience Requirement

Occupation Group	Minimum Period of Related Experience													Standard Error of Total Number of Vacancies
		Less than One Year												
	None	1—3 Months	4—6 Months	7—11 Months	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7—9 Years	10 Years or More	Total	
ESTIMATED NUMBER OF JOB VACANCIES														
Professional, semiprofessional, and managerial workers	1,849	8	2	1	158	216	109	117	117	17	35	27	2,656	92.9
Clerical and sales workers	695	22	83	25	133	118	30	13	35	1	3	0	1,158	145.0
Service workers	476	0	12	15	20	74	1	7	0	1	0	0	606	81.4
Skilled workers	95	3	7	48	103	260	145	381	133	192	36	78	1,481	325.0
Semiskilled workers	833	106	116	3	46	352	68	8	7	0	0	0	1,539	360.0
Unskilled workers	478	0	25	0	3	1	0	0	0	0	0	0	507	140.0
Total, Monroe County	4,426	139[a]	245	92[a]	463	1,021	353	526[a]	292	211[a]	74	105[a]	7,947	548.0
Standard error of total	272.0	60.1	39.2	47.4	71.0	323.0	100.0	231.0	66.3	141.0	0	53.9	548.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP														
Professional, semiprofessional, and managerial workers	69.6	0.3	0.1	(d)	5.9	8.1	4.1	4.4	4.4	0.6	1.3	1.0	100.0	
Clerical and sales workers	60 0	1.9	7.2	2.2	11.5	10.2	2.6	1.1	3.0	0.1	0.3	0	100.0	
Service workers	78.5	0	2.0	2.5	3.3	12.2	0.2	1.2	0	0.2	0	0	100.0	
Skilled workers	6.4	0.2	0.5	3.2	7.0	17.6	9.8	25.7	9.0	13.0	2.4	5.3	100.0	
Semiskilled workers	54.1	6.9	7.5	0.2	3.0	22.9	4.4	0.5	0.5	0	0	0	100.0	
Unskilled workers	94.3	0	4.9	0	0.6	0.2	0	0	0	0	0	0	100.0	
Total	55.7	1.7	3.1	1.2	5.8	12.8	4.4	6.6	3.7	2.7	0.9	1.3	100.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE														
Professional, semiprofessional, and managerial workers	41.8		0 8		34.1	21.2	30.9		40.1		47.3		33.4	
Clerical and sales workers	15.7		33.9		28.7	11.6	8.5		12.0		4.1		14.6	
Service workers	10.8		4.9		4.3	7.2	0.3		0		0		7.6	
Skilled workers	2.1		2.9		22.2	25.5	41 1		45.5		48.6		18.6	
Semiskilled workers	18.8		47.3		9.9	34.5	19.3		2.4		0		19.4	
Unskilled workers	10.8		10.2		0.6	0.1	0		0		0		6.4	
Total	100.0	(a)	100.0	(a)	100.0	100.0	100.0	(a)	100.0	(a)	100.0	(a)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 12: May, Occupation and Experience

Job Vacancies, by Occupation Group and Minimum Experience Requirement

Occupation Group	Minimum Period of Related Experience													Standard Error of Total Number of Vacancies
		Less than One Year												
	None	1—3 Months	4—6 Months	7—11 Months	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7—9 Years	10 Years or More	Total	
					ESTIMATED NUMBER OF JOB VACANCIES									
Professional, semiprofessional, and managerial workers	1,230	6	23	0	74	333	65	121	150	52	28	20	2,102	91.3
Clerical and sales workers	1,147	12	59	1	247	189	57	33	78	0	0	3	1,826	209.0
Service workers	634	24	19	0	129	10	1	2	4	0	0	0	823	157.0
Skilled workers	292	0	40	0	161	445	72	181	287	48	93	112	1,731	263.0
Semiskilled workers	546	48	148	21	209	135	99	52	3	0	0	0	1,261	198.0
Unskilled workers	966	10	9	0	8	39	1	0	0	0	0	0	1,033	191.0
Total, Monroe County	4,815	100	298	22[a,b]	828	1,151	295	389	522	100	121[a]	135[a]	8,776	463.0
Standard error of total	341.0	22.0	78.0	17.1	175.0	168.0	68.5	100.0	119.0	0	54.8	74.3	463.0	
					PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP									
Professional, semiprofessional, and managerial workers	58.5	0.3	1.1	0	3.5	15.8	3.1	5.8	7.1	2.5	1.3	1.0	100.0	
Clerical and sales workers	62.8	0.7	3.2	0.1	13.5	10.4	3.1	1.8	4.3	0	0	0.2	100.0	
Service workers	77.0	2.9	2.3	0	15.7	1.2	0.1	0.2	0.5	0	0	0	100.0	
Skilled workers	16.9	0	2.3	0	9.3	25.7	4.2	10.5	16.6	2.8	5.4	6.5	100.0	
Semiskilled workers	43.3	3.8	11.7	1.7	16.6	10.7	7.9	4.1	0.2	0	0	0	100.0	
Unskilled workers	93.5	1.0	0.9	0	0.8	3.8	0.1	0	0	0	0	0	100.0	
Total	54.9	1.1	3.4	0.3	9.4	13.1	3.4	4.4	5.9	1.1	1.4	1.5	100.0	
					PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE									
Professional, semiprofessional, and managerial workers	25.5	6.0	7.7		8.9	28.9	22.0	31.1	28.7	52.0			24.0	
Clerical and sales workers	23.8	12.0	19.8		29.8	16.4	19.3	8.5	14.9	0			20.8	
Service workers	13.2	24.0	6.4		15.6	0.9	0.3	0.5	0.8	0			9.4	
Skilled workers	6.1	0	13.4		19.4	38.7	24.4	46.5	55.0	48.0			19.7	
Semiskilled worker	11.3	48.0	49.7		25.2	11.7	33.6	13.4	0.6	0			14.4	
Unskilled workers	20.1	10.0	3.0		1.0	3.4	0.3	0	0	0			11.8	
Total	100.0	100.0	100.0	(a,b)	100.0	100.0	100.0	100.0	100.0	100.0	(a)	(a)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 12: August, Occupation and Experience

Job Vacancies, by Occupation Group and Minimum Experience Requirement

Occupation Group	Minimum Period of Related Experience												Total	Standard Error of Total Number of Vacancies
	Less than One Year													
	None	1—3 Months	4—6 Months	7—11 Months	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7—9 Years	10 Years or More		
	ESTIMATED NUMBER OF JOB VACANCIES													
Professional, semiprofessional, and managerial workers	740	1	25	0	111	277	289	59	269	49	37	20	1,877	65.7
Clerical and sales workers	1,149	5	26	2	206	179	88	54	23	1	0	0	1,733	230.0
Service workers	532	65	33	1	45	3	6	1	3	0	0	3	692	126.0
Skilled workers	59	16	30	0	105	538	284	406	404	96	64	64	2,066	354.0
Semiskilled workers	646	32	109	9	174	109	72	54	8	0	0	2	1,215	263.0
Unskilled workers	893	29	18	0	30	3	4	0	8	0	0	0	985	129.0
Total, Monroe County	4,019	148[a]	241	12[a,b]	671	1,109	743	574[a]	715	146[a]	101	89[a]	8,568	542.0
Standard error of total	383.00	58.50	31.40	7.35	60.20	169.00	138.00	258.00	145.00	49.50	32.30	36.00	542.00	
	PER CENT DISTRIBUTION O F VACANCIES FOR EACH OCCUPATION GROUP													
Professional, semiprofessional, and managerial workers	39.4	0.1	1.3	0	5.9	14.8	15.4	3.1	14.3	2.6	2.0	1.1	100.0	
Clerical and sales workers	66.3	0.3	1.5	0.1	11.9	10.3	5.1	3.1	1.3	0.1	0	0	100.0	
Service workers	76.9	9.4	4.8	0.1	6.5	0.4	0.9	0.1	0.4	0	0	0.4	100.0	
Skilled workers	2.9	0.8	1.5	0	5.1	26.0	13.7	19.7	19.6	4.6	3.1	3.1	100.0	
Semiskilled workers	53.2	2.6	9.0	0.7	14.3	9.0	5.9	4.4	0.7	0	0	0.2	100.0	
Unskilled workers	90.7	2.9	1.8	0	3.0	0.3	0.4	0	0.8	0	0	0	100.0	
Total	46.9	1.7	2.8	0.1	7.8	12.9	8.7	6.7	8.3	1.7	1.2	1.0	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE													
Professional, semiprofessional, and managerial workers	18.4		10.4		16.5	25.0	38.9		37.6		36.6		21.9	
Clerical and sales workers	28.6		10.8		30.7	16.1	11.8		3.2		0		20.2	
Service workers	13.2		13.7		6.7	0.3	0.8		0.4		0		8.1	
Skilled workers	1.5		12.4		15.6	48.5	38.2		56.5		63.4		24.1	
Semiskilled workers	16.1		45.2		25.9	9.8	9.7		1.1		0		14.2	
Unskilled workers	22.2		7.5		4.5	0.3	0.5		1.1		0		11.5	
Total	100.0	(a)	100.0	(a,b)	100.0	100.0	100.0	(a)	100.0	(a)	100.0	(a)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 12a: February, Occupation and Experience, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Occupation Group and Minimum Experience Requirement

Occupation Group	Minimum Period of Related Experience												Total
	Less than One Year												
	None	1—3 Months	4—6 Months	7—11 Months	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7—9 Years	10 Years or More	
	ESTIMATED NUMBER OF JOB VACANCIES												
Professional, semiprofessional, and managerial workers	643	7	2	1	95	173	91	71	106	14	25	15	1,243
Clerical and sales workers	591	19	73	9	91	103	28	13	34	0	3	0	964
Service workers	412	0	8	15	20	72	1	7	0	1	0	0	536
Skilled workers	67	0	6	48	91	253	57	139	133	161	32	77	1,064
Semiskilled workers	554	60	104	3	45	68	68	8	7	0	0	0	917
Unskilled workers	393	0	25	0	3	0	0	0	0	0	0	0	421
Total, Monroe County	2,660	86[e]	218	76[e]	345	669	245	238[e]	280	176[e]	60	92[e]	5,145
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP												
Professional, semiprofessional, and managerial workers	51.7	0.6	0.2	0.1	7.6	13.9	7.3	5.7	8.5	1.1	2.0	1.2	100.0
Clerical and sales workers	61.3	2.0	7.6	0.9	9.4	10.7	2.9	1.3	3.5	0	0.3	0	100.0
Service workers	76.9	0	1.5	2.8	3.7	13.4	0.2	1.3	0	0.2	0	0	100.0
Skilled workers	6.3	0	0.6	4.5	8.6	23.8	5.4	13.1	12.5	15.1	3.0	7.2	100.0
Semiskilled workers	60.4	6.5	11.3	0.3	4.9	7.4	7.4	0.9	0.8	0	0	0	100.0
Unskilled workers	93.3	0	5.9	0	0.7	0	0	0	0	0	0	0	100.0
Total	51.7	1.7	4.2	1.5	6.7	13.0	4.8	4.6	5.4	3.4	1.2	1.8	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE												
Professional, semiprofessional, and managerial workers	24.2		0.9		27.5	25.9	37.1		37.9		41.7		24.2
Clerical and sales workers	22.2		33.5		26.4	15.4	11.4		12.1		5.0		18.7
Service workers	15.5		3.7		5.8	10.8	0.4		0		0		10.4
Skilled workers	2.5		2.8		26.4	37.8	23.3		47.5		53.3		20.7
Semiskilled workers	20.8		47.7		13.0	10.2	27.8		2.5		0		17.8
Unskilled workers	14.8		11.5		0.9	0	0		0		0		8.2
Total	100.0	(c)	100.0	(c)	100.0	100.0	100.0	(c)	100.0	(c)	100.0	(c)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 12a: May, Occupation and Experience, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Occupation Group and Minimum Experience Requirement

Occupation Group	Minimum Period of Related Experience												
		Less than One Year											
	None	1–3 Months	4–6 Months	7–11 Months	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7–9 Years	10 Years or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES												
Professional, semiprofessional, and managerial workers	680	0	19	0	45	228	55	83	126	46	26	17	1,325
Clerical and sales workers	959	12	59	1	228	177	50	31	77	0	0	3	1,597
Service workers	511	3	16	0	124	10	1	2	4	0	0	0	671
Skilled workers	276	0	40	0	159	445	72	81	286	48	93	112	1,612
Semiskilled workers	511	43	148	21	209	135	99	52	3	0	0	0	1,221
Unskilled workers	850	10	9	0	7	39	1	0	0	0	0	0	916
Total, Monroe County	3,787	68	291	22^{b,c}	772	1,034	278	249	496	94	119^{c}	132^{c}	7,342
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP												
Professional, semiprofessional, and managerial workers	51.3	0	1.4	0	3.4	17.2	4.2	6.3	9.5	3.5	2.0	1.3	100.0
Clerical and sales workers	60.1	0.8	3.7	0.1	14.3	11.1	3.1	1.9	4.8	0	0	0.2	100.0
Service workers	76.2	0.4	2.4	0	18.5	1.5	0.1	0.3	0.6	0	0	0	100.0
Skilled workers	17.1	0	2.5	0	15.4	27.6	4.5	5.0	17.7	3.0	5.8	6.9	100.0
Semiskilled workers	41.9	3.5	12.1	1.7	17.1	11.1	8.1	4.3	0.2	0	0	0	100.0
Unskilled workers	92.8	1.0	1.0	0	0.8	4.3	0.1	0	0	0	0	0	100.0
Total	51.6	0.9	4.0	0.3	10.5	14.1	3.8	3.4	6.8	1.3	1.6	1.8	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE												
Professional, semiprofessional, and managerial workers	18.0	0	6.5		5.8	22.1	19.8	33.3	25.4	48.9			18.0
Clerical and sales workers	25.3	17.6	20.3		29.5	17.1	18.0	12.4	15.5	0			21.8
Service workers	13.5	4.4	5.5		16.1	1.0	0.4	0.8	0.8	0			9.1
Skilled workers	7.3	0	13.7		20.6	43.0	25.9	32.5	57.7	51.1			22.0
Semiskilled workers	13.5	63.2	50.9		27.1	13.1	35.6	20.9	0.6	0			16.6
Unskilled workers	22.4	14.7	3.1		0.9	3.8	0.4	0	0	0			12.5
Total	100.0	100.0	100.0	(b,c)	100.0	100.0	100.0	100.0	100.0	100.0	(c)	(c)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 12a: August, Occupation and Experience, Immediate Starting Date

Job Vacancies with Immediate Starting Date, by Occupation Group and Minimum Experience Requirement

Occupation Group	Minimum Period of Related Experience												
	Less than One Year												
	None	1–3 Months	4–6 Months	7–11 Months	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7–9 Years	10 Years or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES												
Professional, semiprofessional, and managerial workers	584	1	25	0	75	214	285	55	243	42	36	20	1,580
Clerical and sales workers	1,031	5	26	1	196	171	74	51	17	1	0	0	1,573
Service workers	429	65	33	1	31	1	5	1	3	0	0	3	572
Skilled workers	58	16	6	0	105	526	284	155	403	96	64	64	1,777
Semiskilled workers	580	32	109	9	174	109	72	54	8	0	0	2	1,149
Unskilled workers	659	29	15	0	27	3	4	0	8	0	0	0	745
Total, Monroe County	3,341	148[c]	214	11[b,c]	608	1,024	724	316[c]	682	139[c]	100	89[c]	7,396
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH OCCUPATION GROUP												
Professional, semiprofessional, and managerial workers	37.0	0.1	1.6	0	4.7	13.5	18.0	3.5	15.4	2.7	2.3	1.3	100.0
Clerical and sales workers	65.5	0.3	1.7	0.1	12.5	10.9	4.7	3.2	1.1	0.1	0	0	100.0
Service workers	75.0	11.4	5.8	0.2	5.4	0.2	0.9	0.2	0.5	0	0	0.5	100.0
Skilled workers	3.3	0.9	0.3	0	5.9	29.6	16.0	8.7	22.7	5.4	3.6	3.6	100.0
Semiskilled workers	50.5	2.8	9.5	0.8	15.1	9.5	6.3	4.7	0.7	0	0	0.2	100.0
Unskilled workers	88.5	3.9	2.0	0	3.6	0.4	0.5	0	1.1	0	0	0	100.0
Total	45.2	2.0	2.9	0.1	8.2	13.8	9.8	4.3	9.2	1.9	1.4	1.2	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE												
Professional, semiprofessional, and managerial workers	17.5		11.7		12.3	20.9	39.4		35.6		36.0		21.4
Clerical and sales workers	30.9		12.1		32.2	16.7	10.2		2.5		0		21.3
Service workers	12.8		15.4		5.1	0.1	0.7		0.4		0		7.7
Skilled workers	1.7		2.8		17.3	51.4	39.2		59.1		64.0		24.0
Semiskilled workers	17.4		50.9		28.6	10.6	9.9		1.2		0		15.5
Unskilled workers	19.7		7.0		4.4	0.3	0.6		1.2		0		10.1
Total	100.0	(c)	100.0	(b,c)	100.0	100.0	100.0	(c)	100.0	(c)	100.0	(c)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 12b: February, Detailed Occupation and Experience

Job Vacancies, by Detailed Occupation Group and Minimum Experience Requirement

Occupation Group[a]	Minimum Period of Related Experience						Standard Error of Total Number of Vacancies
	None	1–11 Months	1 or 2 Years	3 or 4 Years	5 Years or More	Total	
	ESTIMATED NUMBER OF JOB VACANCIES						
Professional workers	1,574	6	219	149	107	2,055	70.10
College faculty	72	0	7	22	19	120	32.90
Engineers	230	1	65	84	56	436	12.00
Electrical	42	0	31	47	23	143	11.50
Industrial	41	0	9	3	6	59	0
Mechanical	78	1	21	28	20	148	3.46
Primary and kindergarten teachers	402	0	0	4	0	406	42.70
Secondary teachers and principals	395	0	1	5	1	402	43.80
Registered nurses	124	0	56	0	0	180	0
Natural scientists	76	0	9	14	9	108	0
Semiprofessional workers	225	4	79	61	53	422	13.40
Draftsmen	11	0	41	25	16	93	6.00
Laboratory technicians	98	4	24	3	1	130	2.45
Physical instructors	83	0	0	0	0	83	2.45
Managers and officials	50	1	76	16	36	179	42.70
Clerical workers	429	106	163	23	34	755	78.10
General office clerks	79	12	25	0	12	128	16.40
Secretaries	27	6	50	7	5	95	30.60
Stenographers and typists	50	15	37	0	1	103	24.20
Stock clerks	19	1	10	0	2	32	2.45
Sales workers	266	24	88	20	5	403	119.00
Insurance salesmen	95	4	1	0	0	100[a]	82.20
Salespersons	99	4	28	4	2	137[a]	57.70
Service workers	476	27	94	8	1	606	81.40
Practical nurses	91	0	0	0	0	91	15.90
Hospital attendants	68	10	3	0	0	81	0
Porters	50	0	1	0	0	51	0
Skilled workers	95	58	363	526	439	1,481	325.00
Machinists	6	24	0	38	34	102	27.70
Tool and die makers	0	24	1	11	77	113[a]	69.50
Machine operators (machine shop)	1	0	3	33	32	69	0
Welders	0	0	30	1	1	32[a]	27.50
Electricians	19	0	8	27	5	59	16.40
Lens grinders and polishers	8	0	52	0	34	94	0
Bricklayers	0	0	0	204	0	204[a]	141.00
Carpenters	0	0	0	122	2	124[a]	115.00
Semiskilled workers	833	225	398	76	7	1,539	360.00
Hand sewers	41	63	1	0	0	105	4.90
Sewing machine operators	52	27	1	0	0	80	0
Machine operators (machine shop)	10	28	74	68	0	180[a]	80.00
Apprentices	126	8	19	0	0	153	33.20
Unskilled workers	478	25	4	0	0	507	140.00
Food products workers	10	0	0	0	0	10	0
Hand truckers	74	0	1	0	0	75	20.20
Total, Monroe County	4,426	476	1,484	879	682	7,947	548.00

Explanatory notes and footnotes precede Table D.1.

Table D. 12b: May, Detailed Occupation and Experience

Job Vacancies, by Detailed Occupation Group and Minimum Experience Requirement

Occupation Group[e]	Minimum Period of Related Experience						Standard Error of Total Number of Vacancies
	None	1–11 Months	1 or 2 Years	3 or 4 Years	5 Years or More	Total	
	ESTIMATED NUMBER OF JOB VACANCIES						
Professional workers	885	26	281	138	178	1,508	56.30
College faculty	12	6	34	27	6	85	16.40
Engineers	203	0	135	74	119	531	6.00
Electrical	42	0	59	26	63	190	0
Industrial	35	0	15	10	22	82	0
Mechanical	68	0	55	32	21	176	0
Primary and kindergarten teachers	192	0	0	0	2	194	47.90
Secondary teachers and principals	128	0	7	0	7	142	5.48
Registered nurses	169	13	27	0	0	209	24.20
Natural scientists	42	0	18	16	13	89	0
Semiprofessional workers	252	3	88	47	49	439	61.50
Draftsmen	18	0	25	16	20	79	5.48
Laboratory technicians	139	0	36	7	3	185	2.45
Physical instructors	72	3	3	0	0	78[a]	61.20
Managers and officials	93	0	38	1	23	155	11.40
Clerical workers	742	35	268	83	75	1,203	124.00
General office clerks	264	17	27	1	0	309	69.10
Secretaries	39	0	70	50	9	168	51.60
Stenographers and typists	85	9	54	2	0	150	14.10
Stock clerks	69	0	15	0	1	85[a]	30.20
Sales workers	405	37	168	7	6	623	151.00
Insurance salesmen	86	0	2	1	0	89[a]	76.70
Salespersons	200	9	84	6	3	302[a]	104.00
Service workers	634	43	139	3	4	823	157.00
Practical nurses	54	2	41	0	0	97	28.00
Hospital attendants	101	13	2	0	1	117	23.00
Porters	72	0	0	0	0	72	4.90
Skilled workers	292	40	606	253	540	1,731	263.00
Machinists	1	0	6	29	81	117[a]	54.60
Tool and die makers	0	0	0	9	129	138[a]	51.30
Machine operators (machine shop)	11	0	25	21	11	68	0
Welders	0	0	50	14	5	69[a]	25.60
Electricians	160	0	11	5	22	199[a]	137.00
Lens grinders and polishers	7	0	26	0	27	60	2.45
Bricklayers	0	0	56	0	0	56[a]	55.00
Carpenters	0	0	1	102	58	161[a]	113.00
Semiskilled workers	546	217	344	151	3	1,261	198.00
Hand sewers	30	43	0	0	0	73	0
Sewing machine operators	11	36	0	2	0	49	0
Machine operators (machine shop)	36	6	53	110	1	206	61.00
Apprentices	180	0	6	0	0	186[a]	82.90
Unskilled workers	966	19	47	1	0	1,033	191.00
Food products workers	155	0	6	0	0	161[a]	60.30
Hand truckers	195	2	6	0	0	203	53.10
Total, Monroe County	4,815	420	1,979	684	878	8,776	463.00

Explanatory notes and footnotes precede Table D.1.

Table D. 12b: August, Detailed Occupation and Experience

Job Vacancies, by Detailed Occupation Group and Minimum Experience Requirement

Occupation Group[e]	Minimum Period of Related Experience						Standard Error of Total Number of Vacancies
	None	1—11 Months	1 or 2 Years	3 or 4 Years	5 Years or More	Total	
	ESTIMATED NUMBER OF JOB VACANCIES						
Professional workers	490	21	246	247	287	1,291	37.50
College faculty	20	0	11	20	3	54	0
Engineers	156	0	130	162	217	665	23.20
Electrical	54	0	45	102	148	349	23.10
Industrial	27	0	20	6	20	73	2.45
Mechanical	39	0	49	48	40	176	0
Primary and kindergarten teachers	65	0	12	0	0	77[a]	29.60
Secondary teachers and principals	34	0	0	1	0	35	5.48
Registered nurses	105	17	16	0	1	139	0
Natural scientists	30	0	15	41	24	110	0
Semiprofessional workers	173	5	114	90	66	448	35.90
Draftsmen	35	0	21	64	16	136	35.00
Laboratory technicians	120	0	62	5	0	187	3.46
Physical instructors	3	0	6	0	0	9[a]	7.35
Managers and officials	77	0	28	11	22	138	10.10
Clerical workers	698	23	286	81	15	1,103	155.00
General office clerks	129	2	27	10	4	172	44.30
Secretaries	58	0	38	32	8	136	27.00
Stenographers and typists	66	4	69	0	1	140	28.80
Stock clerks	25	5	10	10	1	51	7.35
Sales workers	451	10	99	61	9	630	165.00
Insurance salesmen	59	0	4	15	0	78[a]	41.20
Salespersons	294	10	79	5	3	391[a]	150.00
Service workers	532	99	48	7	6	692	126.00
Practical nurses	55	0	7	0	0	62	0
Hospital attendants	54	22	3	1	1	81	11.50
Porters	121	0	0	0	0	121	38.90
Skilled workers	59	46	643	690	628	2,066	354.00
Machinists	2	0	11	15	134	162	59.00
Tool and die makers	0	0	0	10	87	97[a]	40.10
Machine operators (machine shop)	5	0	26	39	55	125	11.70
Welders	0	16	57	29	3	105[a]	36.20
Electricians	3	0	7	36	65	111[a]	54.80
Lens grinders and polishers	1	0	4	0	0	5	0
Bricklayers	0	0	0	0	0	0	0
Carpenters	0	0	1	417	1	419[a]	274.00
Semiskilled workers	646	150	283	126	10	1,215	263.00
Hand sewers	3	43	46	0	0	92	4.90
Sewing machine operators	10	17	35	0	0	62	0
Machine operators (machine shop)	304	6	85	52	3	450[a]	249.00
Apprentices	77	12	0	6	0	95[a]	36.30
Unskilled workers	893	47	33	4	8	985	129.00
Food products workers	383	0	0	0	0	383	115.00
Hand truckers	168	3	3	0	8	182	16.80
Total, Monroe County	4,019	401	1,780	1,317	1,051	8,568	542.00

Explanatory notes and footnotes precede Table D.1.

Table D. 13: February, Education and Starting Date

Job Vacancies, by Minimum Education Requirement and Starting Date

Years of Schooling Required	Starting Date											Standard Error of Total Number of Vacancies
	Immediately	Later in February 1965	March	April	May	June	July	August	September	October 1965 or Later	Total	
					ESTIMATED NUMBER OF JOB VACANCIES							
0	330	5	0	0	0	0	0	0	0	0	335	63.3
1—7	518	40	60	84	0	0	0	0	35	0	737	185.0
8	621	10	12	0	240	0	0	0	11	0	894[a]	299.0
9—11	610	82	51	317	0	0	0	0	24	0	1,084	314.0
12	1,790	60	153	56	182	4	7	0	6	0	2,258	232.0
13—15	493	32	5	3	0	84	1	0	3	0	621	39.7
16	704	30	23	18	3	37	6	1	882	2	1,706	84.6
17—19	51	6	2	1	0	0	0	0	70	0	130	33.0
20	32	3	0	0	0	0	112	0	35	0	182	0
Total, Monroe County	5,149	268	306[a]	479[a]	425[a]	125	126	1[b]	1,066	2[b]	7,947	548.0
Standard error of total	353.0	52.7	123.0	305.0	283.0	0	0	0	82.4	0	548.0	
					PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING							
0	98.5	1.5	0	0	0	0	0	0	0	0	100.0	
1—7	70.3	5.4	8.1	11.4	0	0	0	0	4.7	0	100.0	
8	69.5	1.1	1.3	0	26.8	0	0	0	1.2	0	100.0[a]	
9—11	56.3	7.6	4.7	29.2	0	0	0	0	2.2	0	100.0	
12	79.3	2.7	6.8	2.5	8.1	0.2	0.3	0	0.3	0	100.0	
13—15	79.4	5.2	0.8	0.5	0	13.5	0.2	0	0.5	0	100.0	
16	41.3	1.8	1.3	1.1	0.2	2.2	0.4	0.1	51.7	0.1	100.0	
17—19	39.2	4.6	1.5	0.8	0	0	0	0	53.8	0	100.0	
20	17.6	1.6	0	0	0	0	61.5	0	19.2	0	100.0	
Total	64.8	3.4	3.8	6.0	5.3	1.6	1.6	(d)	13.4	(d)	100.0	
					PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE							
0	6.4	1.9	0			0	0		0		4.2	
1—7	10.1	14.9	19.6			0	0		3.3		9.3	
8	12.1	3.7	3.9			0	0		1.0		11.3	
9—11	11.8	30.6	16.7			0	0		2.3		13.6	
12	34.8	22.4	50.0			3.2	5.6		0.6		28.4	
13—15	9.6	11.9	1.6			67.2	0.8		0.3		7.8	
16	13.7	11.2	7.5			29.6	4.8		82.7		21.5	
17—19	1.0	2.2	0.7			0	0		6.6		1.6	
20	0.6	1.1	0			0	88.9		3.3		2.3	
Total	100.0	100.0	100.0[a]	(a)	(a)	100.0	100.0	(b)	100.0	(b)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D.13: May, Education and Starting Date

Job Vacancies, by Minimum Education Requirement and Starting Date

Years of Schooling Required	Starting Date								Standard Error of Total Number of Vacancies
	Immediately	Later in May 1965	June	July	August	September	October 1965 or Later	Total	
	ESTIMATED NUMBER OF JOB VACANCIES								
0	481	4	12	5	0	17	0	519	112.0
1—7	628	15	21	6	0	5	0	675	184.0
8	1,206	1	3	2	0	4	0	1,216	242.0
9—11	678	28	58	2	0	4	0	770	142.0
12	2,947	48	278	183	4	40	7	3,507	329.0
13—15	558	22	10	3	14	57	4	668	71.2
16	744	23	49	68	10	276	13	1,183	383.0
17—19	47	3	3	8	0	62	0	123	18.0
20	53	6	0	31	0	24	1	115	0
Total, Monroe County	7,342	150	434	308	28[a,b]	489	25[b]	8,776	463.0
Standard error of total	445.00	5.39	117.00	76.80	11.70	52.40	0	463.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING								
0	92.7	0.8	2.3	1.0	0	3.3	0	100.0	
1—7	93.0	2.2	3.1	0.9	0	0.7	0	100.0	
8	99.2	0.1	0.2	0.2	0	0.3	0	100.0	
9—11	88.1	3.6	7.5	0.3	0	0.5	0	100.0	
12	84.0	1.4	7.9	5.2	0.1	1.1	0.2	100.0	
13—15	83.5	3.3	1.5	0.4	2.1	8.5	0.6	100.0	
16	62.9	1.9	4.1	5.7	0.9	23.3	1.1	100.0	
17—19	38.2	2.4	2.4	6.5	0	50.4	0	100.0	
20	46.1	5.2	0	27.0	0	20.9	0.9	100.0	
Total	83.7	1.7	4.9	3.5	0.3	5.6	0.3	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE								
0	6.6	2.7	2.8	1.6		3.5		5.9	
1—7	8.6	10.0	4.8	1.9		1.0		7.7	
8	16.4	0.7	0.7	0.6		0.8		13.9	
9—11	9.2	18.7	13.4	0.6		0.8		8.8	
12	40.1	32.0	64.1	59.4		8.2		40.0	
13—15	7.6	14.7	2.3	1.0		11.7		7.6	
16	10.1	15.3	11.3	22.1		56.4		13.5	
17—19	0.6	2.0	0.7	2.6		12.7		1.4	
20	0.7	4.0	0	10.1		4.9		1.3	
Total	100.0	100.0	100.0	100.0	(a,b)	100.0	(b)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D.13: August, Education and Starting Date

Job Vacancies, by Minimum Education Requirement and Starting Date

Years of Schooling Required	Starting Date: Immediately	Starting Date: Later in August 1965	Starting Date: September	Starting Date: October 1965 or Later	Starting Date: Total	Standard Error of Total Number of Vacancies
	ESTIMATED NUMBER OF JOB VACANCIES					
0	209	4	4	0	217	69.70
1— 7	589	8	200	0	797	153.00
8	1,228	30	364	0	1,622	336.00
9—11	1,155	6	35	56	1,252	295.00
12	2,665	53	75	44	2,837	249.00
13—15	511	21	81	9	622	32.30
16	922	23	100	23	1,068	25.20
17—19	36	4	11	1	52	2.45
20	81	3	17	0	101	0
Total, Monroe County	7,396	152	887	133[a]	8,568	542.00
Standard error of total	487.0	14.7	259.0	59.7	542.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
0	96.3	1.8	1.8	0	100.0	
1— 7	73.9	1.0	25.1	0	100.0	
8	75.7	1.8	22.4	0	100.0	
9—11	92.2	0.5	2.8	4.5	100.0	
12	93.9	1.9	2.6	1.6	100.0	
13—15	82.2	3.4	13.0	1.4	100.0	
16	86.3	2.2	9.4	2.2	100.0	
17—19	64.2	7.7	21.2	1.9	100.0	
20	80.2	3.0	16.8	0	100.0	
Total	86.3	1.8	10.4	1.6	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH STARTING DATE					
0	2.8	2.6	0.5		2.5	
1— 7	8.0	5.3	22.5		9.3	
8	16.6	19.7	41.0		18.9	
9—11	15.6	3.9	3.9		14.6	
12	35.9	34.9	8.5		33.1	
13—15	6.9	13.8	9.1		7.3	
16	12.5	15.1	11.3		12.5	
17—19	0.5	2.6	1.2		0.6	
20	1.1	2.0	1.9		1.2	
Total	100.0	100.0	100.0	(a)	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D.14: February, Education and Experience

Job Vacancies, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required: 0	1—7	8	9—11	12	13—15	16	17—19	20	Total	Standard Error of Total Number of Vacancies
ESTIMATED NUMBER OF JOB VACANCIES											
Less than one year: None	210	311	252	523	1,189	401	1,366	66	108	4,426	272.0
1— 3 months	17	0	24	39	52	4	3	0	0	139ᵃ	60.1
4— 6 months	95	8	28	27	45	40	2	0	0	245	39.2
7—11 months	0	0	2	52	37	0	1	0	0	92ᵃ	47.4
1 year	0	79	24	29	213	62	22	1	33	463	71.0
2 years	3	175	46	338	277	62	101	18	1	1,021	323.0
3 years	0	96	73	12	77	13	67	10	5	353	100.0
4 years	0	0	271	22	152	5	46	16	14	526ᵃ	231.0
5 years	0	66	4	23	92	29	64	9	5	292	66.3
6 years	0	2	142	11	42	0	12	2	0	211ᵃ	141.0
7—9 years	10	0	0	8	24	2	16	6	8	74	0
10 years or more	0	0	28	0	58	3	6	2	8	105ᵃ	53.9
Total, Monroe County	335	737	894ᵃ	1,084	2,258	621	1,706	130	182	7,947	548.0
Standard error of total	63.3	185.0	299.0	314.0	232.0	39.7	84.6	33.0	0	548.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE											
Less than one year: None	4.7	7.0	5.7	11.8	26.9	9.1	30.9	1.5	2.4	100.0	
1— 3 months										(a)	
4— 6 months	38.8	3.3	11.4	11.0	18.4	16.3	0.8	0	0	100.0	
7—11 months										(a)	
1 year	0	17.1	5.2	6.3	46.0	13.4	4.8	0.2	7.1	100.0	
2 years	0.3	17.1	4.5	33.1	27.1	6.1	9.9	1.8	0.1	100.0	
3 years	0	27.2	20.7	3.4	21.8	3.7	19.0	2.8	1.4	100.0	
4 years										(a)	
5 years	0	22.6	1.4	7.9	31.5	9.9	21.9	3.1	1.7	100.0	
6 years										(a)	
7—9 years	13.5	0	0	10.8	32.4	2.7	21.6	8.1	10.8	100.0	
10 years or more										(a)	
Total	4.2	9.3	11.3	13.6	28.4	7.8	21.5	1.6	2.3	100.0	
PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING											
Less than one year: None	62.7	42.2	28.3	48.2	52.7	64.6	80.1	50.8	59.3	55.7	
1— 3 months	5.1	0	2.7	3.6	2.3	0.6	0.2	0	0	1.7	
4— 6 months	28.4	1.1	3.1	2.5	2.0	6.4	0.1	0	0	3.1	
7—11 months	0	0	0.2	4.8	1.6	0	0.1	0	0	1.2	
1 year	0	10.7	2.7	2.7	9.4	10.0	1.3	0.8	18.1	5.8	
2 years	0.9	23.7	5.1	31.2	12.3	10.0	5.9	13.8	0.5	12.8	
3 years	0	13.0	8.2	1.1	3.4	2.1	3.9	7.7	2.7	4.4	
4 years	0	0	30.3	2.0	6.7	0.8	2.7	12.3	7.7	6.6	
5 years	0	9.0	0.4	2.1	4.1	4.7	3.8	6.9	2.7	3.7	
6 years	0	0.3	15.9	1.0	1.9	0	0.7	1.5	0	2.7	
7—9 years	3.0	0	0	0.7	1.1	0.3	0.9	4.6	4.4	0.9	
10 years or more	0	0	3.1	0	2.6	0.5	0.4	1.5	4.4	1.3	
Total	100.0	100.0	100.0ᵃ	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D.14: May, Education and Experience

Job Vacancies, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required: 0	1—7	8	9—11	12	13—15	16	17—19	20	Total	Standard Error of Total Number of Vacancies
	ESTIMATED NUMBER OF JOB VACANCIES										
Less than one year: None	339	264	542	482	1,970	450	680	48	40	4,815	341.0
1— 3 months	30	21	13	8	22	0	0	0	6	100	22.0
4— 6 months	68	84	58	10	58	13	7	0	0	298	78.0
7—11 months	0	21	0	0	1	0	0	0	0	22[a,b]	17.1
1 year	68	34	192	109	346	46	11	11	11	828	175.0
2 years	2	242	215	59	264	115	224	23	7	1,151	168.0
3 years	1	5	40	79	104	8	44	7	7	295	68.5
4 years	0	4	13	9	255	18	65	3	22	389	100.0
5 years	4	0	65	11	308	13	100	16	5	522	119.0
6 years	0	0	0	0	57	0	31	6	6	100	0
7—9 years	7	0	50	0	37	5	11	3	8	121[a]	54.8
10 years or more	0	0	28	3	85	0	10	6	3	135[a]	74.3
Total, Monroe County	519	675	1,216	770	3,507	668	1,183	123	115	8,776	463.0
Standard error of total	112.0	184.0	242.0	142.0	329.0	71.2	383.0	18.0	0	463.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE										
Less than one year: None	7.0	5.5	11.3	10.0	40.9	9.3	14.1	1.0	0.8	100.0	
1— 3 months	30.0	21.0	13.0	8.0	22.0	0	0	0	6.0	100.0	
4— 6 months	22.8	28.2	19.5	3.4	19.5	4.4	2.3	0	0	100.0	
7—11 months										(a,b)	
1 year	8.2	4.1	23.2	13.2	41.8	5.6	1.3	1.3	1.3	100.0	
2 years	0.2	21.0	18.7	5.1	22.9	10.0	19.5	2.0	0.6	100.0	
3 years	0.3	1.7	13.6	26.8	35.3	2.7	14.9	2.4	2.4	100.0	
4 years	0	1.0	3.3	2.3	65.6	4.6	16.7	0.8	5.7	100.0	
5 years	0.8	0	12.5	2.1	59.0	2.5	19.2	3.1	1.0	100.0	
6 years	0	0	0	0	57.0	0	31.0	6.0	6.0	100.0	
7—9 years										(a)	
10 years or more										(a)	
Total	5.9	7.7	13.9	8.8	40.0	7.6	13.5	1.4	1.3	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING										
Less than one year: None	65.3	39.1	44.6	62.6	56.2	67.4	57.5	39.0	34.8	54.9	
1— 3 months	5.8	3.1	1.1	1.0	0.6	0	0	0	5.2	1.1	
4— 6 months	13.1	12.4	4.8	1.3	1.7	1.9	0.6	0	0	3.4	
7—11 months	0	3.1	0	0	(d)	0	0	0	0	0.3	
1 year	13.1	5.0	15.8	14.2	9.9	6.9	0.9	8.9	9.6	9.4	
2 years	0.4	35.9	17.7	7.7	7.5	17.2	18.9	18.7	6.1	13.1	
3 years	0.2	0.7	3.3	10.3	3.0	1.2	3.7	5.7	6.1	3.4	
4 years	0	0.6	1.1	1.2	7.3	2.7	5.5	2.4	19.1	4.4	
5 years	0.8	0	5.3	1.4	8.8	1.9	8.5	13.0	4.3	5.9	
6 years	0	0	0	0	1.6	0	2.6	4.9	5.2	1.1	
7—9 years	1.3	0	4.1	0	1.1	0.7	0.9	2.4	7.0	1.4	
10 years or more	0	0	2.3	0.4	2.4	0	0.8	4.9	2.6	1.5	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Explanatory notes and footnotes precede Table D.1.

Table D. 14: August, Education and Experience

Job Vacancies, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required										Standard Error of Total Number of Vacancies
	0	1—7	8	9—11	12	13—15	16	17—19	20	Total	
	ESTIMATED NUMBER OF JOB VACANCIES										
Less than one year: None	113	500	572	737	1,298	393	347	15	44	4,019	383.00
1— 3 months	3	1	69	67	7	0	1	0	0	148[a]	58.50
4— 6 months	58	8	33	55	66	17	4	0	0	241	31.40
7—11 months	0	9	0	0	3	0	0	0	0	12[a,b]	7.35
1 year	37	49	152	87	258	56	27	3	2	671	60.20
2 years	0	175	229	72	369	64	183	7	10	1,109	169.00
3 years	0	0	131	116	222	44	224	1	5	743	138.00
4 years	0	3	380	29	124	5	13	0	20	574[a]	258.00
5 years	0	52	19	56	337	35	204	9	3	715	145.00
6 years	0	0	4	5	87	4	25	13	8	146[a]	49.50
7—9 years	6	0	0	0	59	2	26	1	7	101	32.30
10 years or more	0	0	33	28	7	2	14	3	2	89[a]	36.00
Total, Monroe County	217	797	1,622	1,252	2,837	622	1,068	52[b]	101	8,568	542.00
Standard error of total	69.70	153.00	336.00	295.00	249.00	32.30	25.20	2.45	0.00	542.00	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE										
Less than one year: None	2.8	12.4	14.2	18.3	32.3	9.8	8.6	0.4	1.1	100.0	
1— 3 months										(a)	
4— 6 months	24.1	3.3	13.7	22.8	27.4	7.1	1.7	0	0	100.0	
7—11 months										(a.b)	
1 year	5.5	7.3	22.7	13.0	38.5	8.3	4.0	0.4	0.3	100.0	
2 years	0	15.8	20.6	6.5	33.3	5.8	16.5	0.6	0.9	100.0	
3 years	0	0	17.6	15.6	29.9	5.9	30.1	0.1	0.7	100.0	
4 years										(a)	
5 years	0	7.3	2.7	7.8	47.1	4.9	28.5	1.3	0.4	100.0	
6 years										(a)	
7—9 years	5.9	0	0	0	58.4	2.0	25.7	1.0	6.9	100.0	
10 years or more										(a)	
Total	2.5	9.3	18.9	14.6	33.1	7.3	12.5	0.6	1.2	100.0	
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING										
Less than one year: None	52.1	62.7	35.3	58.9	45.8	63.2	32.5		43.6	46.9	
1— 3 months	1.4	0.1	4.3	5.4	0.2	0	0.1		0	1.7	
4— 6 months	26.7	1.0	2.0	4.4	2.3	2.7	0.4		0	2.8	
7—11 months	0	1.1	0	0	0.1	0	0		0	0.1	
1 year	17.1	6.1	9.4	6.9	9.1	9.0	2.5		2.0	7.8	
2 years	0	22.0	14.1	5.8	13.0	10.3	17.1		9.9	12.9	
3 years	0	0	8.1	9.3	7.8	7.1	21.0		5.0	8.7	
4 years	0	0.4	23.4	2.3	4.4	0.8	1.2		19.8	6.7	
5 years	0	6.5	1.2	4.5	11.9	5.6	19.1		3.0	8.3	
6 years	0	0	0.2	0.4	3.1	0.6	2.3		7.9	1.7	
7—9 years	2.8	0	0	0	2.1	0.3	2.4		6.9	1.2	
10 years or more	0	0	2.0	2.2	0.2	0.3	1.3		2.0	1.0	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(b)	100.0	100.0	

Explanatory notes and footnotes precede Table D.1

Table D. 15a: February, Education and Experience, Professional, Semiprofessional, and Managerial Workers

Job Vacancies for Professional, Semiprofessional, and Managerial Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required Less than 8	8	9—11	12	13 or More	Total
			ESTIMATED NUMBER OF JOB VACANCIES			
None	0	0	24	73	1,752	1,849
1—11 months	0	0	0	1	10	11[b]
1 or 2 years	0	0	6	91	277	374
3 or 4 years	0	0	0	56	170	226
5 years or more	0	0	1	28	167	196
Total	0[b]	0[b]	31[b]	249	2,376	2,656
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE			
None	0	0	1.3	3.9	94.7	100.0
1—11 months						(b)
1 or 2 years	0	0	1.6	24.3	74.1	100.0
3 or 4 years	0	0	0	24.8	75.2	100.0
5 years or more	0	0	0.5	14.3	85.2	100.0
Total	0	0	1.2	9.4	89.4	100.0
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING			
None				29.3	73.7	69.6
1—11 months				0.4	0.4	0.4
1 or 2 years				36.5	11.7	14.1
3 or 4 years				22.5	7.2	8.5
5 years or more				11.2	7.0	7.4
Total	(b)	(b)	(b)	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

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Table D.15a: May, Education and Experience, Professional, Semiprofessional, and Managerial Workers

Job Vacancies for Professional, Semiprofessional, and Managerial Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	0	0	1	134	1,095	1,230
1—11 months	0	0	0	3	26	29[b]
1 or 2 years	1	0	2	50	354	407
3 or 4 years	0	1	0	31	154	186
5 years or more	0	0	1	31	218	250
Total	1[b]	1[b]	4[b]	249	1,847	2,102
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	0	0	0.1	10.9	89.0	100.0
1—11 months						(b)
1 or 2 years	0.2	0	0.5	12.3	87.0	100.0
3 or 4 years	0	0.5	0	16.7	82.8	100.0
5 years or more	0	0	0.4	12.4	87.2	100.0
Total	0	0	0.2	11.8	87.9	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None				53.8	59.3	58.5
1—11 months				1.2	1.4	1.4
1 or 2 years				20.1	19.2	19.4
3 or 4 years				12.4	8.3	8.8
5 years or more				12.4	11.8	11.9
Total	(b)	(b)	(b)	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15a: August, Education and Experience, Professional, Semiprofessional, and Managerial Workers

Job Vacancies for Professional, Semiprofessional, and Managerial Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
			ESTIMATED NUMBER OF JOB VACANCIES			
None	0	0	0	46	694	740
1—11 months	0	0	4	0	22	26ᵇ
1 or 2 years	0	1	0	57	330	388
3 or 4 years	0	0	1	68	279	348
5 years or more	0	0	0	28	347	375
Total	0ᵇ	1ᵇ	5ᵇ	199	1,672	1,877
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE			
None	0	0	0	6.2	93.8	100.0
1—11 months						(b)
1 or 2 years	0	0.3	0	14.7	85.1	100.0
3 or 4 years	0	0	0.3	19.5	80.2	100.0
5 years or more	0	0	0	7.5	92.5	100.0
Total	0	0.1	0.3	10.6	89.1	100.0
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING			
None				23.1	41.5	39.4
1—11 months				0	1.3	1.4
1 or 2 years				28.6	19.7	20.7
3 or 4 years				34.2	16.7	18.5
5 years or more				14.1	20.8	20.0
Total	(b)	(b)	(b)	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15b: February, Education and Experience, Clerical and Sales Workers

Job Vacancies for Clerical and Sales Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	29	20	32	535	79	695
1—11 months	0	0	9	81	40	130
1 or 2 years	0	0	58	180	13	251
3 or 4 years	0	12	8	23	0	43[b]
5 years or more	0	0	0	37	2	39[b]
Total	29[b]	32[a,b]	107	856	134	1,158
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	4.2	2.9	4.6	77.0	11.4	100.0
1—11 months	0	0	6.9	62.3	30.8	100.0
1 or 2 years	0	0	23.1	71.7	5.2	100.0
3 or 4 years						(b)
5 years or more						(b)
Total	2.5	2.8	9.2	73.9	11.6	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None			29.9	62.5	59.0	60.0
1—11 months			8.4	9.5	29.9	11.2
1 or 2 years			54.2	21.0	9.7	21.7
3 or 4 years			7.5	2.7	0	3.7
5 years or more			0	4.3	1.5	3.4
Total	(b)	(a,b)	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15b: May, Education and Experience, Clerical and Sales Workers

Job Vacancies for Clerical and Sales Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required: Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	34	14	154	892	53	1,147
1—11 months	1	28	0	43	0	72
1 or 2 years	1	1	50	330	54	436
3 or 4 years	0	8	16	52	14	90
5 years or more	0	0	2	79	0	81
Total	36[b]	51[b]	222	1,396	121	1,826
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	23.0	1.2	13.4	77.8	4.6	100.0
1—11 months	1.4	38.9	0	59.7	0	100.0
1 or 2 years	0.2	0.2	11.5	75.7	12.4	100.0
3 or 4 years	0	8.9	17.8	57.8	15.6	100.0
5 years or more	0	0	2.5	97.5	0	100.0
Total	2.0	2.8	12.2	76.5	6.6	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None			69.4	63.9	43.8	62.8
1—11 months			0	3.1	0	3.9
1 or 2 years			22.5	23.6	44.6	23.9
3 or 4 years			7.2	3.7	11.6	4.9
5 years or more			0.9	5.7	0	4.4
Total	(b)	(b)	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15b: August, Education and Experience, Clerical and Sales Workers

Job Vacancies for Clerical and Sales Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
			ESTIMATED NUMBER OF JOB VACANCIES			
None	19	116	169	812	33	1,149
1—11 months	0	8	6	19	0	33[b]
1 or 2 years	1	23	64	279	18	385
3 or 4 years	0	0	37	95	10	142
5 years or more	0	3	0	20	1	24[b]
Total	20[b]	150	276	1,225	62	1,733
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE			
None	1.7	10.1	14.7	70.7	2.9	100.0
1—11 months						(b)
1 or 2 years	0.3	6.0	16.6	72.5	4.7	100.0
3 or 4 years	0	0	26.1	66.9	7.0	100.0
5 years or more						(b)
Total	1.2	8.7	15.9	70.7	3.6	100.0
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING			
None		77.3	61.2	66.3	53.2	3.9
1—11 months		5.3	2.2	1.6	0	64.3
1 or 2 years		15.3	23.2	22.8	29.0	22.2
3 or 4 years		0	13.4	7.8	16.1	8.2
5 years or more		2.0	0	1.6	1.6	1.4
Total	(b)	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15c: February, Education and Experience, Service Workers

Job Vacancies for Service Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required: Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	143	74	80	107	72	476
1—11 months	8	5	4	10	0	27[b]
1 or 2 years	59	24	2	5	4	94
3 or 4 years	1	1	0	6	0	8[b]
5 years or more	0	0	0	1	0	1[b]
Total	211	104[a]	86	129	76	606
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	30.0	15.5	16.8	22.5	10.1	100.0
1—11 months						(b)
1 or 2 years	62.8	25.5	2.1	5.3	4.3	100.0
3 or 4 years						(b)
5 years or more						(b)
Total	34.8	17.2	14.2	21.3	12.5	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	67.8	71.2	93.0	82.9	94.7	78.5
1—11 months	3.8	4.8	4.7	7.8	0	4.5
1 or 2 years	28.0	23.1	2.3	3.9	5.3	15.5
3 or 4 years	0.5	1.0	0	4.7	0	1.3
5 years or more	0	0	0	0.8	0	0.2
Total	100.0	100.0[a]	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15c: May, Education and Experience, Service Workers

Job Vacancies for Service Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required: Less than 8	8	9–11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	141	92	143	203	55	634
1—11 months	21	7	1	14	0	43[b]
1 or 2 years	66	19	1	25	28	139
3 or 4 years	1	1	0	1	0	3[b]
5 years or more	3	0	0	0	1	4[b]
Total	232	119	145	243	84	823
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	22.2	14.5	22.6	32.0	8.7	100.0
1—11 months						(b)
1 or 2 years	47.5	13.7	0.7	18.0	20.1	100.0
3 or 4 years						(b)
5 years or more						(b)
Total	28.2	14.5	17.6	29.5	10.2	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	60.8	77.3	98.6	83.5	65.5	77.0
1—11 months	9.1	5.9	0.7	5.8	0	5.2
1 or 2 years	28.4	16.0	0.7	10.3	33.3	16.9
3 or 4 years	0.4	0.8	0	0.4	0	0.4
5 years or more	1.3	0	0	0	1.2	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15c: August, Education and Experience, Service Workers

Job Vacancies for Service Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required: Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	188	142	63	78	61	532
1—11 months	9	15	52	23	0	99
1 or 2 years	6	28	3	11	0	48[b]
3 or 4 years	0	2	0	5	0	7[b]
5 years or more	0	3	1	1	1	6[b]
Total	203	190	119	118	62	692
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	35.3	26.7	11.8	14.7	11.5	100.0
1—11 months	9.1	15.2	52.5	23.2	0	100.0
1 or 2 years						(b)
3 or 4 years						(b)
5 years or more						(b)
Total	29.3	27.5	17.2	17.1	9.0	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	92.6	74.7	52.9	66.1	98.4	76.9
1—11 months	4.4	7.9	43.7	19.5	0	14.3
1 or 2 years	3.0	14.7	2.5	9.3	0	6.9
3 or 4years	0	1.1	0	4.2	0	1.0
5 years or more	0	1.6	0.8	0.8	1.6	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15d: February, Education and Experience, Skilled Workers

Job Vacancies for Skilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required: Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	20	1	0	37	37	95
1—11 months	0	1	56	1	0	58[b]
1 or 2 years	178	30	9	140	6	363
3 or 4 years	95	273	17	135	6	526
5 years or more	78	174	41	143	3	439
Total	371	479[a]	123	456	52[b]	1,481
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	21.1	1.1	0	38.9	38.9	100.0
1—11 months						(b)
1 or 2 years	49.0	8.3	2.5	38.6	1.7	100.0
3 or 4 years	18.1	51.9	3.2	25.7	1.1	100 0
5 years or more	17.8	39.6	9.3	32.6	0.7	100.0
Total	25.0	32.3	8.3	30.8	3.5	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	5.4	0.2	0	8.1		6.4
1—11 months	0	0.2	45.5	0.2		3.9
1 or 2 years	48.0	6.3	7.3	30.7		24.5
3 or 4 years	25.6	57.0	13.8	29.6		35.5
5 years or more	21.0	36.3	33.3	31.4		29.6
Total	100.0	100.0[a]	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15d: May, Education and Experience, Skilled Workers

Job Vacancies for Skilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	10	18	1	252	11	292
1—11 months	28	0	0	12	0	40[b]
1 or 2 years	248	176	66	107	9	606
3 or 4 years	7	34	8	198	6	253
5 years or more	8	143	11	374	4	540
Total	301	371	86	943	30[b]	1,731
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	3.4	6.2	0.3	86.3	3.8	100.0
1—11 months						(b)
1 or 2 years	40.9	29.0	10.9	17.7	1.5	100.0
3 or 4 years	2.8	13.4	3.2	78.3	2.4	100.0
5 years or more	1.5	26.5	2.0	69.3	0.7	100.0
Total	17.4	21.4	5.0	54.5	1.7	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	3.3	4.9	1.2	26.7		16.9
1—11 months	9.3	0	0	1.3		2.3
1 or 2 years	82.4	47.4	76.7	11.3		35.0
3 or 4 years	2.3	9.2	9.3	21.0		14.6
5 years or more	2.7	38.5	12.8	39.7		31.2
Total	100.0	100.0	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15d: August, Education and Experience, Skilled Workers

Job Vacancies for Skilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	1	0	2	45	11	59[b]
1—11 months	0	16	0	30	0	46[b]
1 or 2 years	212	227	43	157	4	643
3 or 4 years	3	440	98	126	23	690
5 years or more	58	42	85	436	7	628
Total	274	725	228	794	45[b]	2,066
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None						(b)
1—11 months						(b)
1 or 2 years	33.0	35.3	6.7	24.4	0.6	100.0
3 or 4 years	0.4	63.8	14.2	18.3	3.3	100.0
5 years or more	9.2	6.7	13.5	69.4	1.1	100.0
Total	13.3	35.1	11.0	38.4	2.2	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	0.4	0	0.9	5.7		2.9
1—11 months	0	2.2	0	3.8		2.2
1 or 2 years	77.4	31.3	18.9	19.8		31.1
3 or 4 years	1.1	60.7	43.0	15.9		33.4
5 years or more	21.2	5.8	37.3	54.9		30.4
Total	100.0	100.0	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15e: February, Education and Experience, Semiskilled Workers

Job Vacancies for Semiskilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	124	32	292	384	1	833
1—11 months	111	24	49	41	0	225
1 or 2 years	20	15	290	73	0	398
3 or 4 years	0	58	9	9	0	76
5 years or more	0	0	0	7	0	7[b]
Total	255	129[a]	640	514	1[b]	1,539
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	14.9	3.8	35.1	46.1	0.1	100.0
1—11 months	49.3	10.7	21.8	18.2	0	100.0
1 or 2 years	5.0	3.8	72.9	18.3	0	100.0
3 or 4 years	0	76.3	11.8	11.8	0	100.0
5 years or more						(b)
Total	16.6	8.4	41.6	33.4	0.1	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	48.6	24.8	45.6	74.7		54.1
1—11 months	43.5	18.6	7.7	8.0		14.6
1 or 2 years	7.8	11.6	45.3	14.2		25.9
3 or 4 years	0	45.0	1.4	1.8		4.9
5 years or more	0	0	0	1.4		0.5
Total	100.0	100.0[a]	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15e: May, Education and Experience, Semiskilled Workers

Job Vacancies for Semiskilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	114	60	34	334	4	546
1—11 months	168	27	13	9	0	217
1 or 2 years	1	198	47	95	3	344
3 or 4 years	2	9	63	77	0	151
5 years or more	0	0	0	3	0	3[b]
Total	285	294	157	518	7[b]	1,261
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	20.9	11.0	6.2	61.2	0.7	100.0
1—11 months	77.4	12.4	6.0	4.1	0	100.0
1 or 2 years	0.3	57.6	13.7	27.6	0.9	100.0
3 or 4 years	1.3	6.0	41.7	51.0		100.0
5 years or more						(b)
Total	22.6	23.3	12.5	41.1	0.6	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	40.0	20.4	21.7	64.5		43.3
1—11 months	58.9	9.2	8.3	1.7		17.2
1 or 2 years	0.4	67.3	29.9	18.3		27.3
3 or 4 years	0.7	3.1	40.1	14.9		12.0
5 years or more	0	0	0	0.6		0.2
Total	100.0	100.0	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15e: August, Education and Experience, Semiskilled Workers

Job Vacancies for Semiskilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	67	46	366	167	0	646
1—11 months	70	28	48	4	0	150
1 or 2 years	33	98	31	121	0	283
3 or 4 years	0	65	9	52	0	126
5 years or more	0	0	3	5	2	10[b]
Total	170	237	457	349	2[b]	1,215
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXISTENCE					
None	10.4	7.1	56.7	25.9	0	100.0
1—11 months	46.7	18.7	32.0	2.7	0	100.0
1 or 2 years	11.7	34.6	11.0	42.8	0	100.0
3 or 4 years	0	51.6	7.1	41.3	0	100.0
5 years or more						(b)
Total	14.0	19.5	37.6	28.7	0.2	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	39.4	19.4	80.1	47.9		53.2
1—11 months	41.2	11.8	10.5	1.1		12.3
1 or 2 years	19.4	41.4	6.8	34.7		23.3
3 or 4 years	0	27.4	2.0	14.9		10.4
5 years or more	0	0	0.7	1.4		0.8
Total	100.0	100.0	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15f: February, Education and Experience, Unskilled Workers

Job Vacancies for Unskilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	ESTIMATED NUMBER OF JOB VACANCIES					
None	205	125	95	53	0	478
1—11 months	1	24	0	0	0	25[b]
1 or 2 years	0	1	2	1	0	4[b]
3 or 4 years	0	0	0	0	0	0[b]
5 years or more	0	0	0	0	0	0[b]
Total	206	150[a]	97	54[b]	0[b]	507
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE					
None	42.9	26.2	19.9	11.1	0	100.0
1—11 months						(b)
1 or 2 years						(b)
3 or 4 years						(b)
5 years or more						(b)
Total	40.6	29.6	19.1	10.7	0	100.0
	PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING					
None	99.5	83.3	97.9			94.3
1—11 months	0.5	16.0	0			4.9
1 or 2 years	0	0.7	2.1			0.8
3 or 4 years	0	0	0			0
5 years or more	0	0	0			0
Total	100.0	100.0[a]	100.0	(b)	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D.15f: May, Education and Experience, Unskilled Workers

Job Vacancies for Unskilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
			ESTIMATED NUMBER OF JOB VACANCIES			
None	304	358	149	155	0	966
1—11 months	6	9	4	0	0	19[b]
1 or 2 years	30	12	2	3	0	47[b]
3 or 4 years	0	0	1	0	0	1[b]
5 years or more	0	0	0	0	0	0[b]
Total	340	379	156	158	0[b]	1,033
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE			
None	31.5	37.1	15.4	16.0		100.0
1—11 months						(b)
1 or 2 years						(b)
3 or 4 years						(b)
5 years or more						(b)
Total	32.9	36.7	15.1	15.3		100.0
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING			
None	89.4	94.5	95.5	98.1		93.5
1—11 months	1.8	2.4	2.6	0		1.8
1 or 2 years	8.8	3.2	1.3	1.9		4.5
3 or 4 years	0	0	0.6	0		0.1
5 years or more	0	0	0	0		0
Total	100.0	100.0	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 15f: August, Education and Experience, Unskilled Workers

Job Vacancies for Unskilled Workers, by Minimum Education and Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
			ESTIMATED NUMBER OF JOB VACANCIES			
None	338	268	137	150	0	893
1—11 months	0	35	12	0	0	47b
1 or 2 years	9	4	18	2	0	33b
3 or 4 years	0	4	0	0	0	4b
5 years or more	0	8	0	0	0	8b
Total	347	319	167	152	0b	985
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH PERIOD OF EXPERIENCE			
None	37.8	30.0	15.3	16.8	0	100.0
1—11 months						(b)
1 or 2 years						(b)
3 or 4 years						(b)
5 years or more						(b)
Total	35.2	32.4	17.0	15.4	0	100.0
			PER CENT DISTRIBUTION OF VACANCIES FOR EACH YEAR OF SCHOOLING			
None	97.4	84.0	82.0	98.7		90.7
1—11 months	0	11.0	7.2	0		4.8
1 or 2 years	2.6	1.3	10.8	1.3		3.4
3 or 4 years	0	1.3	0	0		0.4
5 years or more	0	2.5	0	0		0.8
Total	100.0	100.0	100.0	100.0	(b)	100.0

Explanatory notes and footnotes precede Table D.1.

Table D. 16a: Duration of Vacancy, Employment Size, and Industry

Per Cent of Job Vacancies That Were Open (a) at Least Three Months or (b) at Least Six Months on August 13, 1965, by Employment Size and Industry Group

Industry Group	Employment Size								
	0—9	10—19	20—49	50—99	100—249	250—999	1,000—2,449	2,500 and Over	Total
(a) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST THREE MONTHS ON AUGUST 13, 1965									
Durable manufacturing	100.0	27.3	70.5	35.9	26.7	14.6	28.1	35.9	35.7
Nondurable manufacturing	0	100.0	50.0	0	14.3	14.9	21.3	0	16.5
Construction	11.5	45.0	0	0	0	0	0	0	19.6
Public utilities and transportation	0	100.0	0	0	0	0	40.0	0	50.8
Trade, retail and wholesale	0	43.8	16.0	10.5	56.4	9.7	2.7	11.1	21.4
Finance, insurance, and real estate	0	0	0	28.6	0	15.2	16.2	0	14.0
Services, other than education	9.9	0	0	3.1	21.1	29.5	46.7	0	21.1
Education, public and private	0	100.0	0	0	0	21.4	0	37.3	28.2
Government	0	0	57.1	100.0	100.0	24.6	27.7	15.1	30.5
Total	14.6	45.3	34.8	16.1	23.6	16.6	27.1	31.9	26.9
(b) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST SIX MONTHS ON AUGUST 13, 1965									
Durable manufacturing	0	27.3	65.6	33.3	0	4.1	4.5	17.5	20.4
Nondurable manufacturing	0	100.0	0	0	4.5	7.2	15.2	0	7.2
Construction	0	11.7	0	0	0	0	0	0	3.4
Public utilities and transportation	0	0	0	0	0	0	30.0	0	3.3
Trade, retail and wholesale	0	0	0	0	54.5	4.0	0	0	7.6
Finance, insurance, and real estate	0	0	0	0	0	0	2.7	0	0.4
Services, other than education	0	0	0	0	8.5	26.2	33.3	0	11.9
Education, public and private	0	0	0	0	0	9.5	0	24.5	15.5
Government	0	0	0	0	100.0	15.4	6.4	5.9	7.8
Total	0	14.6	18.1	11.0	14.4	8.3	13.0	15.7	12.3

Explanatory notes and footnotes precede Table D. 1.

Table D. 16b: Duration of Vacancy, Occupation, and Education

Per Cent of Job Vacancies That Were Open (a) at Least Three Months or (b) at Least Six Months on August 13, 1965, by Occupation Group and Minimum Education Requirement

Occupation Group	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
(a) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST THREE MONTHS ON AUGUST 13, 1965						
Professional, semiprofessional, and managerial workers	0	0	0	23.5	45.3	42.5
Clerical and sales workers	0	8.7	3.3	19.2	30.6	15.6
Service workers	14.3	15.1	17.0	7.9	64.5	18.5
Skilled workers	76.6	22.3	45.5	36.3	7.5	37.3
Semiskilled workers	24.1	31.2	16.4	27.1	0	23.3
Unskilled workers	4.3	8.5	19.3	22.3	0	10.4
Total	29.1	18.8	19.1	24.4	44.6	26.9
(b) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST SIX MONTHS ON AUGUST 13, 1965						
Professional, semiprofessional, and managerial workers	0	0	0	10.2	25.1	23.2
Clerical and sales workers	0	2.0	0	2.4	6.3	2.1
Service workers	0	2.7	0	1.8	32.3	4.0
Skilled workers	43.1	4.6	34.4	10.6	0	15.5
Semiskilled workers	2.9	26.2	13.5	23.2	0	17.1
Unskilled workers	3.5	3.8	14.9	4.5	0	5.7
Total	13.3	7.1	13.2	7.6	24.3	12.3

Explanatory notes and footnotes precede Table D.1.

Table D. 16c: Duration of Vacancy, Occupation, and Experience

Per Cent of Job Vacancies That Were Open (a) at Least Three Months or (b) at Least Six Months on August 13, 1965, by Occupation Group and Minimum Experience Requirement

Occupation Group	Minimum Period of Related Experience					
	None	1—11 Months	1 or 2 Years	3 or 4 Years	5 Years or More	Total
	(a) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST THREE MONTHS ON AUGUST 13, 1965					
Professional, semiprofessional, and managerial workers	45.8	65.4	44.0	26.0	45.9	42.5
Clerical and sales workers	16.5	0	15.9	10.6	20.8	15.6
Service workers	20.8	3.0	27.1	14.3	16.7	18.5
Skilled workers	13.0	2.2	63.6	7.3	51.3	37.3
Semiskilled workers	21.5	16.0	25.3	34.9	50.0	23.3
Unskilled workers	10.9	12.8	0	0	0	10.4
Total	20.9	12.7	40.1	14.6	47.9	26.9
	(b) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST SIX MONTHS ON AUGUST 13, 1965					
Professional, semiprofessional, and managerial workers	22.9	65.4	25.8	18.9	21.0	23.2
Clerical and sales workers	1.3	0	2.9	7.0	0	2.1
Service workers	5.1	0	0	0	16.7	4.0
Skilled workers	0	0	21.7	0.7	29.4	15.5
Semiskilled workers	19.6	0	15.8	27.0	20.0	17.1
Unskilled workers	5.6	12.8	0	0	0	5.7
Total	9.1	5.7	16.4	8.1	25.2	12.3

Explanatory notes and footnotes precede Table D.1.

Table D. 16d: Duration of Vacancy, Education, and Experience

Per Cent of Job Vacancies That Were Open (a) at Least Three Months or (b) at Least Six Months on August 13, 1965, by Minimum Education and Minimum Experience Requirements

Minimum Period of Related Experience	Years of Schooling Required					
	Less than 8	8	9—11	12	13 or More	Total
	(a) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST THREE MONTHS ON AUGUST 13, 1965					
None	9.1	13.6	15.3	21.0	47.1	20.9
1—11 months	29.1	2.9	5.7	1.3	77.3	12.7
1 or 2 years	82.8	40.9	17.2	17.6	50.9	40.1
3 or 4 years	0	7.4	7.7	22.5	24.3	14.6
5 years or more	0	53.6	89.9	47.3	45.0	47.9
Total	29.1	18.8	19.1	24.4	44.6	26.9
	(b) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST SIX MONTHS ON AUGUST 13, 1965					
None	2.8	7.8	10.6	4.6	24.3	9.1
1—11 months	0	0	4.9	0	77.3	5.7
1 or 2 years	45.2	10.2	2.5	2.7	28.3	16.4
3 or 4 years	0	0.8	1.4	17.2	16.1	8.1
5 years or more	0	50.0	83.1	15.9	22.1	25.2
Total	13.3	7.1	13.2	7.6	24.3	12.3

Explanatory notes and footnotes precede Table D.1.

Table D. 16e: Duration of Vacancy, Occupation, and Sex

Per Cent of Job Vacancies That Were Open (a) at Least Three Months or
(b) at Least Six Months on August 13, 1965, by Occupation Group and Sex

Occupation Group	Estimated Number of Job Vacancies Open to: Males	Females	Either Sex	Total
	(a) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST THREE MONTHS ON AUGUST 13, 1965			
Professional, semiprofessional, and managerial workers	34.1	20.0	52.5	42.6
Clerical and sales workers	18.4	8.4	25.5	15.6
Service workers	6.9	21.6	48.8	18.5
Skilled workers	38.1	36.4	9.6	37.3
Semiskilled workers	22.4	32.9	16.8	23.3
Unskilled workers	15.3	5.3	9.1	10.4
Total	28.2	13.1	40.0	26.9
	(b) PER CENT OF JOB VACANCIES THAT WERE OPEN AT LEAST SIX MONTHS ON AUGUST 13, 1965			
Professional, semiprofessional, and managerial workers	12.5	2.5	34.7	23.2
Clerical and sales workers	2.7	0.8	3.8	2.1
Service workers	1.0	1.3	25.0	4.0
Skilled workers	16.0	0	3.8	15.5
Semiskilled workers	18.0	16.2	12.0	17.1
Unskilled workers	6.1	5.3	0	5.7
Total	12.5	3.6	22.3	12.3

Explanatory notes and footnotes precede Table D.1.

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